Developer Guide

AWS Config

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AWS Config: Developer Guide

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What Is AWS Config?

AWS Config provides a detailed view of the configuration of AWS resources in your AWS account. This includes how the resources are related to one another and how they were configured in the past so that you can see how the configurations and relationships change over time.

An AWS *resource* is an entity you can work with in AWS, such as an Amazon Elastic Compute Cloud (EC2) instance, an Amazon Elastic Block Store (EBS) volume, a security group, or an Amazon Virtual Private Cloud (VPC). For a complete list of AWS resources supported by AWS Config, see Supported Resource Types for AWS Config.

Considerations

- **AWS account**: You need an active AWS account. For more information, see Signing up for AWS.
- **Amazon S3 Bucket**: You need an S3 bucket to receive data for your configuration snapshots and history. For more information, see Permissions for the Amazon S3 Bucket.
- **Amazon SNS Topic**: You need an Amazon SNS to receive notifications when there are changes to your configuration snapshots and history. For more information, see Permissions for the Amazon SNS Topic.
- **IAM Role**: You need an IAM role that has the necessary permissions to access AWS Config. For more information, see Permissions for the IAM Role.
- **Resource types**: You can decide which resource types you want AWS Config to record. For more information, see Recording AWS Resources.

Ways to Use AWS Config

When you run your applications on AWS, you usually use AWS resources, which you must create and manage collectively. As the demand for your application keeps growing, so does your need to keep track of your AWS resources. AWS Config is designed to help you oversee your application resources in the following scenarios:

Resource Administration

To exercise better governance over your resource configurations and to detect resource misconfigurations, you need fine-grained visibility into what resources exist and how these

resources are configured at any time. You can use AWS Config to notify you whenever resources are created, modified, or deleted without having to monitor these changes by polling the calls made to each resource.

You can use AWS Config rules to evaluate the configuration settings of your AWS resources. When AWS Config detects that a resource violates the conditions in one of your rules, AWS Config flags the resource as noncompliant and sends a notification. AWS Config continuously evaluates your resources as they are created, changed, or deleted.

Auditing and Compliance

You might be working with data that requires frequent audits to ensure compliance with internal policies and best practices. To demonstrate compliance, you need access to the historical configurations of your resources. This information is provided by AWS Config.

Managing and Troubleshooting Configuration Changes

When you use multiple AWS resources that depend on one another, a change in the configuration of one resource might have unintended consequences on related resources. With AWS Config, you can view how the resource you intend to modify is related to other resources and assess the impact of your change.

You can also use the historical configurations of your resources provided by AWS Config to troubleshoot issues and to access the last known good configuration of a problem resource.

Security Analysis

To analyze potential security weaknesses, you need detailed historical information about your AWS resource configurations, such as the AWS Identity and Access Management (IAM) permissions that are granted to your users, or the Amazon EC2 security group rules that control access to your resources.

You can use AWS Config to view the IAM policy that was assigned to a user, group, or role at any time in which AWS Config was recording. This information can help you determine the permissions that belonged to a user at a specific time: for example, you can view whether the user `John Doe` had permission to modify Amazon VPC settings on Jan 1, 2015.

You can also use AWS Config to view the configuration of your EC2 security groups, including the port rules that were open at a specific time. This information can help you determine whether a security group blocked incoming TCP traffic to a specific port.

Partner Solutions

AWS partners with third-party specialists in logging and analysis to provide solutions that use AWS Config output. For more information, visit the AWS Config detail page at AWS Config.

Features

When you set up AWS Config, you can complete the following:

Resource management

- Specify the resource types you want AWS Config to record.

- Set up an Amazon S3 bucket to receive a configuration snapshot on request and configuration history.
- Set up Amazon SNS to send configuration stream notifications.
- Grant AWS Config the permissions it needs to access the Amazon S3 bucket and the Amazon SNS topic.

  For more information, see Viewing AWS Resource Configurations and History and Managing AWS Resource Configurations and History.

Rules and conformance packs

- Specify the rules that you want AWS Config to use to evaluate compliance information for the recorded resource types.
- Use conformance packs, or a collection of rules that can be deployed and monitored as a single entity in your AWS account.

  For more information, see Evaluating Resources with AWS Config Rules and Conformance Packs.

Remediation

- Remediate noncompliant resources that are evaluated by AWS Config Rules.

  For more information, see Remediation.

Aggregators

- Use an aggregator to get a centralized view of your resource inventory and compliance. An aggregator collects AWS Config configuration and compliance data from multiple AWS accounts and AWS Regions into a single account and Region.

  For more information, see Multi-Account Multi-Region Data Aggregation.

Advanced queries

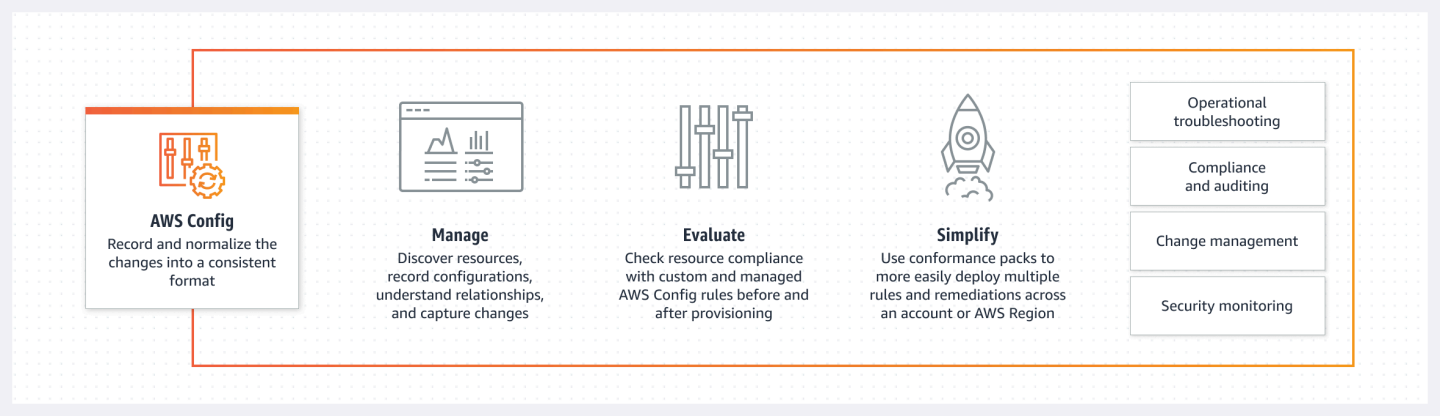
- Use one of the sample queries or write your own query by referring to the configuration schema of the AWS resource.

  For more information, see Querying the Current Configuration State of AWS Resources .

How AWS Config Works

AWS Config provides a detailed view of the configuration of AWS resources in your AWS account. This includes how the resources are related to one another and how they were configured in the past so that you can see how the configurations and relationships change over time.

An AWS *resource* is an entity you can work with in AWS, such as an Amazon Elastic Compute Cloud (EC2) instance, an Amazon Elastic Block Store (EBS) volume, a security group, or an Amazon Virtual Private Cloud (VPC). For a complete list of AWS resources supported by AWS Config, see Supported Resource Types for AWS Config.



Resource Discovery

When you turn on AWS Config, it first discovers the supported AWS resources that exist in your account and generates a configuration item for each resource.

AWS Config also generates configuration items when the configuration of a resource changes, and it maintains historical records of the configuration items of your resources from the time you start the configuration recorder. By default, AWS Config creates configuration items for every supported resource in the region. If you don't want AWS Config to create configuration items for all supported resources, you can specify the resource types that you want it to track.

Before specifying a resource type for AWS Config to track, check Resource Coverage by Region Availability to see if the resource type is supported in the AWS Region where you are setting up AWS Config. If a resource type is supported by AWS Config in at least one Region, you can enable the recording of that resource type in all Regions supported by AWS Config, even if the specified resource type is not supported the AWS Region where you are setting up AWS Config.

Resource Tracking

AWS Config keeps track of all changes to your resources by invoking the Describe or the List API call for each resource in your account. The service uses those same API calls to capture configuration details for all related resources.

For example, removing an egress rule from a VPC security group causes AWS Config to invoke a Describe API call on the security group. AWS Config then invokes a Describe API call on all of the instances associated with the security group. The updated configurations of the security group (the resource) and of each instance (the related resources) are recorded as configuration items and delivered in a configuration stream to an Amazon Simple Storage Service (Amazon S3) bucket.

AWS Config also tracks the configuration changes that were not initiated by the API. AWS Config examines the resource configurations periodically and generates configuration items for the configurations that have changed.

If you are using AWS Config rules, AWS Config continuously evaluates your AWS resource configurations for desired settings. Depending on the rule, AWS Config will evaluate your resources either in response to configuration changes or periodically. Each rule is associated with an AWS Lambda function, which contains the evaluation logic for the rule. When AWS Config evaluates your resources, it invokes the rule's AWS Lambda function. The function returns the compliance status of the evaluated resources. If a resource violates the conditions of a rule, AWS Config flags

the resource and the rule as noncompliant. When the compliance status of a resource changes, AWS Config sends a notification to your Amazon SNS topic.

Delivery of Configuration Items

AWS Config can deliver configuration items through one of the following channels:

Amazon S3 Bucket

AWS Config tracks changes in the configuration of your AWS resources, and it regularly sends updated configuration details to an Amazon S3 bucket that you specify. For each resource type that AWS Config records, it sends a *configuration history file* every six hours. Each configuration history file contains details about the resources that changed in that six-hour period. Each file includes resources of one type, such as Amazon EC2 instances or Amazon EBS volumes. If no configuration changes occur, AWS Config does not send a file.

AWS Config sends a *configuration snapshot* to your Amazon S3 bucket when you use the deliver-config-snapshot command with the AWS CLI, or when you use the DeliverConfigSnapshot action with the AWS Config API. A configuration snapshot contains configuration details for all resources that AWS Config records in your AWS account. The configuration history file and configuration snapshot are in JSON format.

> **Note**
>
> AWS Config only delivers the configuration history files and configuration snapshots to the specified S3 bucket; AWS Config doesn't modify the lifecycle policies for objects in the S3 bucket. You can use lifecycle policies to specify whether you want to delete or archive objects to Amazon S3 Glacier. For more information, see Managing Lifecycle Configuration in the *Amazon Simple Storage Service User Guide*. You can also see the Archiving Amazon S3 Data to S3 Glacier blog post.

Amazon SNS Topic

An Amazon Simple Notification Service (Amazon SNS) topic is a communication channel that Amazon SNS uses to deliver messages (or *notifications*) to subscribing endpoints such as an email address or clients. Other types of Amazon SNS notifications include push notification messages to apps on mobile phones, Short Message Service (SMS) notifications to SMS-enabled mobile phones

and smart phones, and HTTP POST requests. For best results, use Amazon SQS as the notification endpoint for the SNS topic and then process the information in the notification programmatically.

AWS Config uses the Amazon SNS topic that you specify to send you notifications. The type of notification that you are receiving is indicated by the value for the `messageType` key in the message body, as in the following example:

```
"messageType": "ConfigurationHistoryDeliveryCompleted"
```

The notifications can be any of the following message types.

Message type	Description
ComplianceChangeNotification	The compliance type of a resource that AWS Config evaluates has changed. The compliance type indicates whether the resource complies with a specific AWS Config rule, and it is represented by the `ComplianceType` key in the message. The message includes `newEvaluationResult` and `oldEvaluationResult` objects for comparison.
ConfigRulesEvaluationStarted	AWS Config started evaluating your rule against the specified resources.
ConfigurationSnapshotDeliveryStarted	AWS Config started delivering the configuration snapshot to your Amazon S3 bucket. The name of the Amazon S3 bucket is provided for the `s3Bucket` key in the message.
ConfigurationSnapshotDeliveryCompleted	AWS Config successfully delivered the configuration snapshot to your Amazon S3 bucket.
ConfigurationSnapshotDeliveryFailed	AWS Config failed to deliver the configuration snapshot to your Amazon S3 bucket.

Message type	Description
ConfigurationHistoryDeliveryCompleted	AWS Config successfully delivered the configuration history to your Amazon S3 bucket.
ConfigurationItemChangeNotification	A resource has been created, deleted, or changed in configuration. This message includes the details of the configuration item that AWS Config creates for this change, and it includes the type of change. These notificat ions are delivered within minutes of a change and are collectively known as the *configura tion stream*.
OversizedConfigurationItemChangeNoti fication	This message type is delivered when a configuration item change notification exceeded the maximum size allowed by Amazon SNS. The message includes a summary of the configuration item. With the exception of SMS messages, Amazon SNS messages can contain up to 256 KB of text data, including XML, JSON, and unformatted text. You can view the complete notification in the specified Amazon S3 bucket location.
OversizedConfigurationItemChangeDeli veryFailed	AWS Config failed to deliver the oversized configuration item change notification to your Amazon S3 bucket.

For example notifications, see Notifications that AWS Config Sends to an Amazon SNS topic. For more information about Amazon SNS, see the Amazon Simple Notification Service Developer Guide.

> **Note**
>
> **Why can't I see my latest configuration changes?**

AWS Config usually records configuration changes to your resources right after a change is detected, or at the frequency that you specify. However, this is on a best effort basis and can take longer at times. If issues persist after sometime, contact Support and provide your AWS Config metrics that are supported by Amazon CloudWatch. For information about these metrics, see AWS Config Usage and Success Metrics.

Control Access to AWS Config

AWS Identity and Access Management is a web service that enables Amazon Web Services (AWS) customers to manage users and user permissions.

To provide access, add permissions to your users, groups, or roles:

- Users and groups in AWS IAM Identity Center:

  Create a permission set. Follow the instructions in Create a permission set in the *AWS IAM Identity Center User Guide*.
- Users managed in IAM through an identity provider:

  Create a role for identity federation. Follow the instructions in Create a role for a third-party identity provider (federation) in the *IAM User Guide*.
- IAM users:
  - Create a role that your user can assume. Follow the instructions in Create a role for an IAM user in the *IAM User Guide*.
  - (Not recommended) Attach a policy directly to a user or add a user to a user group. Follow the instructions in Adding permissions to a user (console) in the *IAM User Guide*.

AWS Config terminology and concepts

To help you understand AWS Config, this topic explains some of the key concepts.

Contents

- AWS Config Interfaces
  - AWS Config Console
  - AWS Config CLI

- AWS Config APIs
  - AWS Config SDKs
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- Configuration Recorder
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- Multi-Account Multi-Region Data Aggregation
  - Source Account
  - Source Region
  - Aggregator
  - Service-linked aggregator
  - Aggregator Account
  - Authorization

AWS Config Interfaces

AWS Config Console

You can manage the service using the AWS Config console. For more information about the AWS Management Console, see AWS Management Console.

AWS Config CLI

The AWS Command Line Interface is a unified tool that you can use to interact with AWS Config from the command line. For more information, see the AWS Command Line Interface User Guide. For a complete list of AWS Config CLI commands, see Available Commands.

AWS Config APIs

In addition to the console and the CLI, you can also use the AWS Config RESTful APIs to program AWS Config directly. For more information, see the AWS Config API Reference.

AWS Config SDKs

As an alternative to using the AWS Config API, you can use one of the AWS SDKs. Each SDK consists of libraries and sample code for various programming languages and platforms. The SDKs provide a convenient way to create programmatic access to AWS Config. For example, you can use the SDKs to sign requests cryptographically, manage errors, and retry requests automatically. For more information, see the Tools for Amazon Web Services page.

Resource Management

Understanding the basic components of AWS Config will help you track resource inventory and changes and evaluate configurations of your AWS resources.

AWS Resources

AWS resources are entities that you create and manage using the AWS Management Console, the AWS Command Line Interface (CLI), the AWS SDKs, or AWS partner tools. Examples of AWS resources include Amazon EC2 instances, security groups, Amazon VPCs, and Amazon Elastic Block Store. AWS Config refers to each resource using its unique identifier, such as the resource ID or an Amazon Resource Name (ARN). For a list of resource types that AWS Config supports, see Supported Resource Types for AWS Config.

Resource Relationship

AWS Config discovers AWS resources in your account and then creates a map of relationships between AWS resources. For example, a relationship might include an Amazon EBS volume `vol-123ab45d` attached to an Amazon EC2 instance `i-a1b2c3d4` that is associated with security group `sg-ef678hk`.

For more information, see Supported Resource Types for AWS Config.

Configuration Recorder

The *configuration recorder* stores the configuration changes to the resource types in scope as configuration items. For more information, see Working with the configuration recorder.

There are two types of configuration recorders.

Type	Description
Customer managed configuration recorder	A configuration recorder that you managed. The resource types in scope are set by you. By default, a customer managed configuration recorder records all supported resources in the AWS Region where AWS Config is running.
Service-linked configuration recorder	A configuration recorder that is linked to a specific AWS service. The resource types in scope are set by the linked service.

Delivery Channel

As AWS Config continually records the changes that occur to your AWS resources, it sends notifications and updated configuration states through the *delivery channel*. You can manage the delivery channel to control where AWS Config sends configuration updates.

Configuration Items

A *configuration item* represents a point-in-time view of the various attributes of a supported AWS resource that exists in your account. The components of a configuration item include metadata, attributes, relationships, current configuration, and related events. AWS Config creates a configuration item whenever it detects a change to a resource type that it is recording. For example, if AWS Config is recording Amazon S3 buckets, AWS Config creates a configuration item whenever a bucket is created, updated, or deleted. You can also select for AWS Config to create a configuration item at the recording frequency that you set.

For more information, see Components of a Configuration Item and Recording Frequency.

Configuration History

A *configuration history* is a collection of the configuration items for a given resource over any time period. A configuration history can help you answer questions about, for example, when the resource was first created, how the resource has been configured over the last month, and what configuration changes were introduced yesterday at 9 AM. The configuration history is available to you in multiple formats. AWS Config automatically delivers a configuration history file for each resource type that is being recorded to an Amazon S3 bucket that you specify. You can select a given resource in the AWS Config console and navigate to all previous configuration items for that resource using the timeline. Additionally, you can access the historical configuration items for a resource from the API.

For more information, see Viewing Compliance History and Querying Compliance History.

Configuration Snapshot

A *configuration snapshot* is a collection of the configuration items for the supported resources that exist in your account. This configuration snapshot is a complete picture of the resources that are being recorded and their configurations. The configuration snapshot can be a useful tool for validating your configuration. For example, you may want to examine the configuration snapshot regularly for resources that are configured incorrectly or that potentially should not exist. The configuration snapshot is available in multiple formats. You can have the configuration snapshot delivered to an Amazon Simple Storage Service (Amazon S3) bucket that you specify. Additionally, you can select a point in time in the AWS Config console and navigate through the snapshot of configuration items using the relationships between the resources.

For more information, see Delivering Configuration Snapshots, Viewing Configuration Snapshots, and Example Configuration Snapshot.

Configuration Stream

A *configuration stream* is an automatically updated list of all configuration items for the resources that AWS Config is recording. Every time a resource is created, modified, or deleted, AWS Config creates a configuration item and adds to the configuration stream. The configuration stream works by using an Amazon Simple Notification Service (Amazon SNS) topic of your choice. The configuration stream is helpful for observing configuration changes as they occur so that you can spot potential problems, generating notifications if certain resources are changed, or updating external systems that need to reflect the configuration of your AWS resources.

AWS Config Rules

An AWS Config rule is a compliance check that helps you manage your ideal configuration settings for specific AWS resources. AWS Config evaluates whether your resource configurations comply with relevant rules and displays the compliance results.

Evaluation Results

There are four possible evaluation results for an AWS Config rule.

Evaluation result	Description
`COMPLIANT`	The rule passes the conditions of the compliance check.
`NON_COMPLIANT`	The rule fails the conditions of the compliance check.
`ERROR`	The one of the required/optional parameter s is not valid, not of the correct type, or is formatted incorrectly.
`NOT_APPLICABLE`	Used to filter out resources that the logic of the rule cannot be applied to. For example, the alb-desync-mode-check rule only checks Application Load Balancers, and ignores Network Load Balancers and Gateway Load Balancers.

Rule Types

There are two types of rules. For more information about the structure of rule definitions and rule metadata, see Components of an AWS Config Rule.

Type	Description	More information
Managed rules	Predefined, customizable rules created by AWS Config.	For a list of managed rules, see List of AWS Config Managed Rules.
Custom rules	Rules that you create from scratch. There are two ways to create AWS Config custom rules: Lambda functions (AWS Lambda Developer Guide) and Guard (Guard GitHub Repository)	For more information, see Creating AWS Config Custom Policy Rules and Creating AWS Config Custom Lambda Rules.

Trigger Types

After you add a rule to your account, AWS Config compares your resources to the conditions of the rule. After this initial evaluation, AWS Config continues to run evaluations each time one is triggered. The evaluation triggers are defined as part of the rule, and they can include the following types.

Trigger type	Description
Configuration changes	AWS Config runs evaluations for the rule when there is a resource that matches the rule's scope and there is a change in configuration of the resource. The evaluation runs after AWS Config sends a configuration item change notification. You choose which resources initiate the evaluation by defining the rule's *scope*. The scope can include the following: • One or more resource types • A combination of a resource type and a resource ID

Trigger type	Description
	• A combination of a tag key and value • When any recorded resource is created, updated, or deleted AWS Config runs the evaluation when it detects a change to a resource that matches the rule's scope. You can use the scope to define which resources initiate evaluations.
Periodic	AWS Config runs evaluations for the rule at a frequency that you choose; for example, every 24 hours.
Hybrid	Some rules have both configuration change and periodic triggers. For these rules, AWS Config evaluates your resources when it detects a configuration change and also at the frequency that you specify.

Evaluation modes

There are two evaluation modes for AWS Config rules.

Evaluation mode	Description
Proactive	Use proactive evaluation to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region. For more information, see Evaluation modes. For a list of managed rules that support

Evaluation mode	Description
	proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.
Detective	Use detective evaluation to evaluate resources that have already been deployed. This allows you to evaluate the configuration settings of your existing resources.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

Conformance Packs

A conformance pack is a collection of AWS Config rules and remediation actions that can be easily deployed as a single entity in an account and a Region or across an organization in AWS Organizations.

Conformance packs are created by authoring a YAML template that contains the list of AWS Config managed or custom rules and remediation actions. You can deploy the template by using the AWS Config console or the AWS CLI.

To quickly get started and to evaluate your AWS environment, use one of the sample conformance pack templates. You can also create a conformance pack YAML file from scratch based on Custom Conformance Pack. A custom conformance pack is a unique collection of AWS Config rules and remediation actions that you can deploy together in an account and an AWS Region, or across an organization in AWS Organizations.

Process checks is a type of AWS Config rule that allows you to track your external and internal tasks that require verification as part of the conformance packs. These checks can be added to an existing conformance pack or a new conformance pack. You can track all compliance that includes AWS Configurations and manual checks in a single location.

Multi-Account Multi-Region Data Aggregation

Multi-account multi-region data aggregation in AWS Config allows you to aggregate AWS Config configuration and compliance data from multiple accounts and regions into a single account. Multi-account multi-region data aggregation is useful for central IT administrators to monitor compliance for multiple AWS accounts in the enterprise. Using aggregators does not incur any additional costs.

Source Account

A source account is the AWS account from which you want to aggregate AWS Config resource configuration and compliance data. A source account can be an individual account or an organization in AWS Organizations. You can provide source accounts individually or you can retrieve them through AWS Organizations.

Source Region

A source region is the AWS Region from which you want to aggregate AWS Config configuration and compliance data.

Aggregator

An aggregator collects AWS Config configuration and compliance data from multiple source accounts and regions. Create an aggregator in the region where you want to see the aggregated AWS Config configuration and compliance data.

> **Note**
>
> Aggregators provide a *read-only view* into the source accounts and regions that the aggregator is authorized to view by replicating data from the source accounts into the aggregator account. Aggregators do not provide mutating access into a source account or region. For example, this means that you cannot deploy rules through an aggregator or push snapshot files to a source account or region through an aggregator.

Service-linked aggregator

A service-linked aggregator is linked to a specific AWS service. The configuration and compliance data in scope are set by the linked service.

Aggregator Account

An aggregator account is an account where you create an aggregator.

Authorization

As a source account owner, authorization refers to the permissions you grant to an aggregator account and region to collect your AWS Config configuration and compliance data. Authorization is not required if you are aggregating source accounts that are part of AWS Organizations.

AWS Service Integrations with AWS Config

AWS Config supports integrations with several other AWS services. This list is non-exhaustive.

AWS Organizations

You can use AWS Organizations to define the accounts to use for AWS Config's multi-account, multi-Region data aggregation capability. AWS Organizations is an account management service that helps you consolidate multiple AWS accounts into an organization that you create and centrally manage. By providing your AWS Organizations details, you can monitor the compliance status across your organization. For more information, AWS Config and AWS Organizations in the *AWS Organizations User Guide*.

AWS Control Tower

AWS Control Tower enables AWS Config on all enrolled accounts, so that it can monitor compliance through detective controls, record resource changes, and deliver resource change logs to the log archive account. For more information, see Monitor resource changes with AWS Config in the *AWS Control Tower User Guide*.

AWS CloudTrail

AWS Config integrates with AWS CloudTrail to correlate configuration changes to particular events in your account. You can use the CloudTrail logs to obtain the details of the event that invoked the change, including who made the request, at what time, and from which IP address. You can navigate to the AWS Config timeline from the CloudTrail console to view the configuration changes related to your AWS API activities.

For more information, see Logging AWS Config API Calls with AWS CloudTrail in the *AWS Config Developer Guide* and Create an event data store for AWS Config configuration items with the console in the *AWS CloudTrail User Guide*.

AWS Security Hub

AWS Security Hub centralizes security checks from other AWS services, including AWS Config rules. Security Hub enables and controls AWS Config rules to verify your resource configurations are aligned to best practices. Enable AWS Config on all accounts in all Regions where Security Hub is to run security checks on your environment's resources. For more information, see AWS services that send findings to Security Hub in the *AWS Security Hub User Guide*.

> **Some Security Hub-related rules are periodic and do not depend on configuration items**
>
> Some Security Hub-related rules are periodic. These rule can run without the configuration recorder being enabled and do not depend on configuration items (CI).
> This means that if you view the rule page, there is no listed CI or supported resource. If you select the resource ID, you will see the following error: `The provided resource ID and resource type cannot be found`. This is expected behavior.

AWS Trusted Advisor

AWS Config managed rules power a set of Trusted Advisor checks across all categories. When you enable certain managed rules, the corresponding Trusted Advisor checks are automatically enabled. To see which Trusted Advisor checks are powered by specific AWS Config managed rules, see AWS Trusted Advisor check reference in the *AWS Support User Guide*.

The AWS Config powered checks are available to customers with AWS Business Support, AWS Enterprise On-Ramp, and AWS Enterprise Support plans. If you enable AWS Config and you have one of these AWS Support plans, then you automatically see recommendations powered by corresponding deployed AWS Config managed rules.

> **Refresh requests are not allowed and resources cannot be excluded**
>
> Results for these checks are automatically refreshed based on change-triggered updates to AWS Config managed rules. Refresh requests are not allowed. Currently, you can't exclude resources from these checks.

For more information, see View Trusted Advisor checks powered by AWS Config in the *AWS Support User Guide*.

AWS Audit Manager

You can use Audit Manager to capture AWS Config evaluations as evidence for audits. When you create or edit a custom control, you can specify one or more AWS Config rules as a data source mapping for evidence collection. AWS Config performs compliance checks based on these rules, and Audit Manager reports the results as compliance check evidence. For more information, see AWS Config Rules supported by AWS Audit Manager in the *AWS Audit Manager User Guide*.

AWS Systems Manager

AWS Config integrates with Systems Manager to record configuration changes to software on your Amazon EC2 instances and servers in your on-premises environment. With this integration, you can gain visibility into operating system (OS) configurations, system-level updates, installed applications, network configuration, and more. AWS Config also provides a history of OS and system-level configuration changes alongside infrastructure configuration changes recorded for Amazon EC2 instances. You can navigate to the AWS Config timeline from the Systems Manager console to view the configuration changes of your managed Amazon EC2 instances. You can use AWS Config to view Systems Manager inventory history and track changes for all your managed instances.

For more information, see Integration with AWS services | Management and Governance, AWS Config configuration recorder, and AWS Config conformance pack deployment in the *AWS Systems Manager User Guide*.

AWS Firewall Manager

To use Firewall Manager, you must enable AWS Config for each of your AWS Organizations member accounts. When new applications are created, Firewall Manager is the single service to build firewall rules, create security policies, and enforce them consistently. For more information, see Enable AWS Config in the *AWS WAF, AWS Firewall Manager, and AWS Shield Advanced Developer Guide*.

> **Note**
>
> Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency

to Continuous. For more information on continuous recording and daily recording, see Recording Frequency.

Amazon EC2 Dedicated Hosts

AWS Config integrates with Amazon EC2 Dedicated Hosts to assess license compliance. AWS Config records when instances are launched, stopped, or shut down on a Dedicated Host, and pairs this information with host and instance level information relevant to software licensing, such as Host ID, Amazon Machine Image (AMI) IDs, number of sockets, and physical cores. This helps you use AWS Config as a data source for your license reporting. You can navigate to the AWS Config timeline from the Amazon EC2 Dedicated Hosts console to view the configuration changes of your Amazon EC2 Dedicated Hosts.

For more information, see Track configuration changes in the *Amazon Elastic Compute Cloud User Guide for Linux Instances* or Track configuration changes in the *Amazon Elastic Compute Cloud User Guide for Windows Instances*.

Application Load Balancers

AWS Config integrates with the Elastic Load Balancing (ELB) service to record configuration changes to Application Load Balancers. AWS Config also includes relationships with associated Amazon EC2 security groups, VPCs, and subnets. You can use this information for security analysis and troubleshooting. For example, you can check which security groups are associated with your Application Load Balancer at any point in time. You can navigate to the AWS Config timeline from the ELB console to view the configuration changes of your Application Load Balancers.

AWS CodeBuild

AWS Configprovides an inventory of your AWS resources and a history of configuration changes to these resources. AWS Config supports AWS CodeBuild; as an AWS resource, which means the service can track your CodeBuild projects. For more information, see Use AWS Config with CodeBuild sample in the *AWS CodeBuild User Guide*.

AWS X-Ray

AWS X-Ray integrates with AWS Config to record configuration changes made to your X-Ray encryption resources. You can use AWS Config to inventory X-Ray encryption resources, audit

the X-Ray configuration history, and send notifications based on resource changes. For more information, see Tracking X-Ray encryption configuration changes with AWS Config in the *AWS X-Ray Developer Guide*.

AWS Service Management Connector

The AWS Service Management Connector for ServiceNow can synchronize AWS Config data from multiple accounts and Regions using an Aggregator. For more information, see Integrating AWS Config in ServiceNow in the *AWS Service Management Connector Administrator Guide*.

Amazon API Gateway

You can use AWS Config to record configuration changes made to your API Gateway API resources and send notifications based on resource changes. Maintaining a configuration change history for API Gateway resources is useful for operational troubleshooting, audit, and compliance use cases. For more information, see Monitoring API Gateway API configuration with AWS Config in the *API Gateway Developer Guide*.

Region Support for AWS Config

Considerations

Some features of AWS Config are only supported in a subset of the AWS Regions where AWS Config is supported.

Resource Management

- For a list of which AWS resource types are supported in which Regions, see Resource Coverage by Region Availability.

AWS Config Rules

- For a list of which AWS Config rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.
- For a list of Regions which support the organizational deployment of AWS Config rules, see Organizational Rules | Region Support.

Conformance Packs

- For a list of Regions which support conformance packs and the organizational deployment of conformance packs, see Conformance Packs | Region Support.

Remediation

- For a list of Regions which support remediation actions for AWS Config rules, see Remediation Actions | Region Support.

Aggregators

- For a list of Regions which support the aggregators, see Aggregators | Region Support.

Advanced Queries

- For a list of Regions which support advanced queries, see Advanced Queries | Region Support.
- For a list of Regions which support the natural language query processor for advanced queries, see Natural language query processor for advanced queries | Region Support.

List of Supported Regions

The following table lists the AWS Regions where you can enable AWS Config.

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS
		config-fips.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
		config-fips.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS
		config-fips.us-west-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com config-fips.us-west-2.amazonaws.com	HTTPS HTTPS
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS
Asia Pacific (Malaysia)	ap-southeast-5	config.ap-southeast-5.amazonaws.com	HTTPS
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Taipei)	ap-east-2	config.ap-east-2.amazonaws.com	HTTPS
Asia Pacific (Thailand)	ap-southeast-7	config.ap-southeast-7.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Mexico (Central)	mx-central-1	config.mx-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Service Limits for AWS Config

The following table describes limits within AWS Config. Unless noted otherwise, the quotas can be increased upon request. You can request a quota increase.

For information about other limits in AWS, see AWS Service Limits.

Resource tags

Description	Limit Value	Can be increased
Maximum number of tags per resource	50	No

AWS Config rules

Description	Limit Value	Can be increased
Maximum number of AWS Config Rules per Region per account	1000	No

Single Account Conformance Packs

Description	Limit Value	Can be increased
Maximum number of conformance packs per account	50	No
Maximum number of AWS Config Rules per conformance pack	130	No

> **Note**
>
> AWS Config rules in conformance packs count in the limit for the Maximum number of AWS Config Rules per Region per account.

Organization Conformance Packs

Description	Limit Value	Can be increased
Maximum number of conformance packs per organization	50	No
Maximum number of AWS Config Rules per organization conformance pack	130	No

> **Note**
>
> Deploying at the organization level counts in the limit for child accounts. AWS Config rules in conformance packs count in the limit for the Maximum number of AWS Config Rules per Region per account.

Aggregators

Description	Limit Value	Can be increased
Maximum number of configuration aggregators	50	Yes
Maximum number of accounts in an aggregator	10000	No
Maximum number of accounts added or deleted per week for all aggregators	1000	Yes

> **Note**
>
> Organization level aggregators and individual account aggregators both count in the limit for the Maximum number of configuration aggregators.

Advanced queries

Description	Limit Value	Can be increased
Maximum number of saved queries in a single account and a Region	300	Yes

Supplemental Information and Related Resources for AWS Config

The following related resources can help you as you work with this service.

- **AWS Config** – The primary web page for information about AWS Config.
- **AWS Config Pricing**
- **Technical FAQ**
- **AWS Config Rule Development Kit (RDK)** – An open-source tool that helps you set up AWS Config, author rules, and then test them using a variety of AWS resource types.
- **Partners** – Links to partner products that are fully integrated with AWS Config to help you visualize, monitor, and manage the data from your configuration stream, configuration snapshots, or configuration history.

- Classes & Workshops – Links to role-based and specialty courses, in addition to self-paced labs to help sharpen your AWS skills and gain practical experience.
- AWS Developer Center – Explore tutorials, download tools, and learn about AWS developer events.
- AWS Developer Tools – Links to developer tools, SDKs, IDE toolkits, and command line tools for developing and managing AWS applications.
- Getting Started Resource Center – Learn how to set up your AWS account, join the AWS community, and launch your first application.
- Hands-On Tutorials – Follow step-by-step tutorials to launch your first application on AWS.
- AWS Whitepapers – Links to a comprehensive list of technical AWS whitepapers, covering topics such as architecture, security, and economics and authored by AWS Solutions Architects or other technical experts.
- AWS Support Center – The hub for creating and managing your AWS Support cases. Also includes links to other helpful resources, such as forums, technical FAQs, service health status, and AWS Trusted Advisor.
- Support – The primary webpage for information about Support, a one-on-one, fast-response support channel to help you build and run applications in the cloud.
- Contact Us – A central contact point for inquiries concerning AWS billing, account, events, abuse, and other issues.

- AWS Site Terms – Detailed information about our copyright and trademark; your account, license, and site access; and other topics.

AWS Software Development Kits for AWS Config

An AWS software development kit (SDK) makes it easier to build applications that access cost-effective, scalable, and reliable AWS infrastructure services. With AWS SDKs, you can get started in minutes with a single, downloadable package that includes the library, code samples, and reference documentation. The following table lists the available SDKs and third-party libraries you can use to access AWS Config programmatically.

Type of Access	Description
AWS SDKs	AWS provides the following SDKs: • AWS SDK for C++ Documentation • AWS Mobile SDK for iOS Documentation • AWS SDK for Go Documentation • AWS SDK for Java Documentation • AWS SDK for JavaScript Documentation • AWS SDK for .NET Documentation • AWS SDK for PHP Documentation • AWS SDK for Python (Boto) Documentation • AWS SDK for Ruby Documentation
Third-party libraries	Developers in the AWS developer community also provide their own libraries, which you can find at the following AWS developer centers: • AWS Java Developer Center • AWS JavaScript Developer Center • AWS PHP Developer Center • AWS Python Developer Center • AWS Ruby Developer Center • AWS Windows and .NET Developer Center

Getting Started with AWS Config

AWS Config provides a detailed view of the configuration of AWS resources in your AWS account. With AWS Config, you can review changes in configurations and relationships between AWS resources, explore resource configuration history, and use rules to determine compliance. For more information, see What Is AWS Config? and How AWS Config Works.

Signing up for AWS

Topics

- Sign up for an AWS account
- Create a user with administrative access

Sign up for an AWS account

If you do not have an AWS account, complete the following steps to create one.

To sign up for an AWS account

1. Open https://portal.aws.amazon.com/billing/signup.
2. Follow the online instructions.

   Part of the sign-up procedure involves receiving a phone call and entering a verification code on the phone keypad.

   When you sign up for an AWS account, an *AWS account root user* is created. The root user has access to all AWS services and resources in the account. As a security best practice, assign administrative access to a user, and use only the root user to perform tasks that require root user access.

AWS sends you a confirmation email after the sign-up process is complete. At any time, you can view your current account activity and manage your account by going to https://aws.amazon.com/ and choosing **My Account**.

Create a user with administrative access

After you sign up for an AWS account, secure your AWS account root user, enable AWS IAM Identity Center, and create an administrative user so that you don't use the root user for everyday tasks.

Secure your AWS account root user

1. Sign in to the AWS Management Console as the account owner by choosing **Root user** and entering your AWS account email address. On the next page, enter your password.

   For help signing in by using root user, see Signing in as the root user in the *AWS Sign-In User Guide*.

2. Turn on multi-factor authentication (MFA) for your root user.

   For instructions, see Enable a virtual MFA device for your AWS account root user (console) in the *IAM User Guide*.

Create a user with administrative access

1. Enable IAM Identity Center.

   For instructions, see Enabling AWS IAM Identity Center in the *AWS IAM Identity Center User Guide*.

2. In IAM Identity Center, grant administrative access to a user.

   For a tutorial about using the IAM Identity Center directory as your identity source, see Configure user access with the default IAM Identity Center directory in the *AWS IAM Identity Center User Guide*.

Sign in as the user with administrative access

- To sign in with your IAM Identity Center user, use the sign-in URL that was sent to your email address when you created the IAM Identity Center user.

  For help signing in using an IAM Identity Center user, see Signing in to the AWS access portal in the *AWS Sign-In User Guide*.

Assign access to additional users

1. In IAM Identity Center, create a permission set that follows the best practice of applying least-privilege permissions.

   For instructions, see Create a permission set in the *AWS IAM Identity Center User Guide*.
2. Assign users to a group, and then assign single sign-on access to the group.

   For instructions, see Add groups in the *AWS IAM Identity Center User Guide*.

Ways to Get Started with AWS Config

After you sign up for an AWS account, you can get started with AWS Config with the AWS Management Console, AWS CLI, or the AWS SDKs.

- Setting Up AWS Config with the Console
- Setting Up AWS Config with the AWS CLI
- Using AWS Config service with the AWS SDK

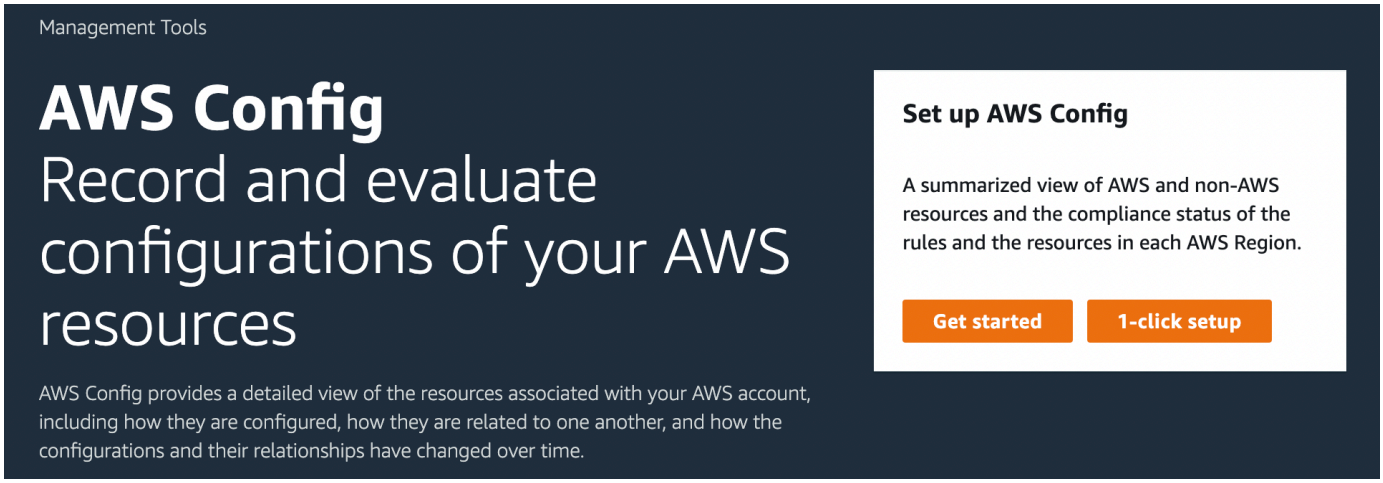
Setting Up AWS Config with the Console

The AWS Management Console provides a quick and streamlined process for setting up AWS Config.

Setting up

To set up AWS Config with the console

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. If this is the first time you are opening the AWS Config console or you are setting up AWS Config in a new region, the AWS Config console page looks like the following:



3. Choose **1-click setup** to launch AWS Config based on AWS best practices. You can also choose **Get started** to go through a more detailed setup process.

Topics

- 1-click setup for AWS Config
- Manual setup for AWS Config

1-click setup for AWS Config

AWS Config **1-click setup** helps simplify the getting started process for AWS Config console customers by reducing the number of manual selections. To go through all the manual selections of the setup process, see Manual setup.

To set up AWS Config with the console using 1-click setup

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **1-click setup**.

The set up page includes three steps, but through the **1-click setup** workflow, you are automatically directed to Step 3 (Review). The following provides a breakdown of that procedure.

- **Settings**: To select the manner by which the AWS Config console records resources and roles, and choose where configuration history and configuration snapshot files are sent.

- **Rules**: For AWS Regions that support AWS Config rules, this step is available for you to configure initial managed rules that you can add to your account. After setting up, AWS Config will evaluate your AWS resources against the rules that you chose. Additional rules can be created and existing ones can be updated in your account after setup.
- **Review**: To verify your setup details.

Step 1: Settings

Recording strategy

The option to record **All resource types with customizable overrides** is selected for you. AWS Config will record all current and future supported resource types in this Region. For more information, see Supported Resource Types.

- **Default settings**

  The default recording frequency is set to **Continuous** for you. This means AWS Config records configuration changes continuously whenever a change occurs.

  AWS Config also supports the option to set the recording frequency to **Daily**. If you select this option after setup, you will receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded. For more information see, Recording Frequency.

  > **Note**
  >
  > AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

- **Override settings – *optional***

  Optionally, after setup you can override the record frequency for specific resource types, or exclude specific resource types from recording. To override the default settings, choose **Settings** in the left navigation of the AWS Config console, and then choose **Edit**.

Considerations When Recording Resources

High Number of AWS Config Evaluations

You might notice increased activity in your account during your initial month recording with AWS Config when compared to subsequent months. During the initial bootstrapping process, AWS Config runs evaluations on all the resources in your account that you have selected for AWS Config to record.

If you are running ephemeral workloads, you may see increased activity from AWS Config as it records configuration changes associated with creating and deleting these temporary resources. An *ephemeral workload* is a temporary use of computing resources that are loaded and run when needed. Examples include Amazon Elastic Compute Cloud (Amazon EC2) Spot Instances, Amazon EMR jobs, and AWS Auto Scaling. If you want to avoid the increased activity from running ephemeral workloads, you can set up the configuration recorder to exclude these resource types from being recorded, or run these types of workloads in a separate account with AWS Config turned off to avoid increased configuration recording and rule evaluations.

Global resource types | Aurora global clusters are initially included in recording

The `AWS::RDS::GlobalCluster` resource type will be recorded in all supported AWS Config Regions where the configuration recorder is enabled.

If you do not want to record `AWS::RDS::GlobalCluster` in all enabled Regions, you can exclude this resource type from recording after setup. Choose **Settings** in the left navigation bar, and then choosing **Edit**. From **Edit**, go to **Override settings** in the **Recording method** section, choose `AWS::RDS::GlobalCluster`, and choose the override "Exclude from recording".

Global resource types | IAM resource types are initially excluded from recording

"All globally recorded IAM resource types" are initially excluded from recording to help you reduce costs. This bundle includes IAM users, groups, roles, and customer managed policies. Choose **Remove** to remove the override and include these resources in your recording.

Additionally, the global IAM resource types (`AWS::IAM::User`, `AWS::IAM::Group`, `AWS::IAM::Role`, and `AWS::IAM::Policy`) cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.

Data governance

The default data retention period to retain AWS Config data for 7 years (2557 days) is selected for you in this section.

The option to **Use an existing AWS Config service-linked role** is selected for you and set to the **AWS Config role**. Service-linked roles are predefined by AWS Config and include all the permissions that the service requires to call other AWS services.

Delivery method

The option to **Choose a bucket from your account** is selected for you in this section. This selection will default to the bucket in your account that is named in the format `config-bucket-accountid`. For example, `config-bucket-012345678901`. If you don't have a bucket created in that format, one will be created for you. If you want to create your own bucket, see Creating a bucket in the *Amazon Simple Storage Service User Guide*.

For more information about S3 buckets, see Buckets overview in the *Amazon Simple Storage Service User Guide*.

Step 2: Rules

Under **AWS Managed Rules**, no rules are selected for you at this step. Instead, you are encouraged to create and update rules after you have finished setting up your account.

Step 3: Review

Review your AWS Config setup details. You can go back to edit changes for each section. Choose **Confirm** to finish setting up AWS Config.

Manual setup for AWS Config

With the **Get started** workflow, you can go through all the manual selections of the setup process to get started with the AWS Config console. For a simplified getting started process, see 1-click setup.

To set up AWS Config with the console using Get started

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Get started**.

The setup page includes three steps. The following provides a breakdown of that procedure after you choose **Get started**.

- **Settings**: To select the manner by which the AWS Config console records resources and roles, and choose where configuration history and configuration snapshot files are sent.
- **Rules**: For AWS Regions that support AWS Config rules, this step is available for you to configure initial managed rules that you can add to your account. After setting up, AWS Config will evaluate your AWS resources against the rules that you chose. Additional rules can be created and existing ones can be updated and in your account after setup.
- **Review**: To verify your setup details.

Step 1: Settings

Recording strategy

In the **Recording method** section, choose a recording strategy. You can specify the AWS resources that you want AWS Config to record.

All resource types with customizable overrides

Set up AWS Config to record configuration changes for all current and future supported resource types in this Region. You can override the recording frequency for specific resource types or exclude specific resource types from recording. For more information, see Supported Resource Types.

- **Default settings**

  Configure the default recording frequency for all current and future supported resource types. For more information see, Recording Frequency.

  - Continuous recording – AWS Config will record configuration changes continuously whenever a change occurs.
  - Daily recording – You will receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded.

> **Note**
>
> AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

- **Override settings**

  Override the recording frequency for specific resource types, or exclude specific resource types from recording. If you change the recording frequency for a resource type or stop recording a resource type, the configuration items that were already recorded will remain unchanged.

Specific resource types

Set AWS Config to record configuration changes for only the resource types that you specify.

- **Specific resource types**

  Choose a resource type to record and its frequency. For more information see, Recording Frequency.

  - Continuous recording – AWS Config will record configuration changes continuously whenever a change occurs.
  - Daily recording – You will receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded.

  > **Note**
  >
  > AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

  If you change the recording frequency for a resource type or stop recording a resource type, the configuration items that were already recorded will remain unchanged.

Considerations When Recording Resources

High Number of AWS Config Evaluations

You might notice increased activity in your account during your initial month recording with AWS Config when compared to subsequent months. During the initial bootstrapping process, AWS

Config runs evaluations on all the resources in your account that you have selected for AWS Config to record.

If you are running ephemeral workloads, you may see increased activity from AWS Config as it records configuration changes associated with creating and deleting these temporary resources. An *ephemeral workload* is a temporary use of computing resources that are loaded and run when needed. Examples include Amazon Elastic Compute Cloud (Amazon EC2) Spot Instances, Amazon EMR jobs, and AWS Auto Scaling. . If you want to avoid the increased activity from running ephemeral workloads, you can set up the configuration recorder to exclude these resource types from being recorded, or run these types of workloads in a separate account with AWS Config turned off to avoid increased configuration recording and rule evaluations.

Considerations: All resource types with customizable overrides

Globally recorded resource types | Aurora global clusters are initially included in recording

The `AWS::RDS::GlobalCluster` resource type will be recorded in all supported AWS Config Regions where the configuration recorder is enabled.

If you do not want to record `AWS::RDS::GlobalCluster` in all enabled Regions, choose "AWS RDS GlobalCluster", and choose the override "Exclude from recording".

Global resource types | IAM resource types are initially excluded from recording

The global IAM resource types are initially excluded from recording to help you reduce costs. This bundle includes IAM users, groups, roles, and customer managed policies. Choose **Remove** to remove the override and include these resources in your recording.

Additionally, the global IAM resource types (`AWS::IAM::User`, `AWS::IAM::Group`, `AWS::IAM::Role`, and `AWS::IAM::Policy`) cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.

Limits

You can add up to 100 frequency overrides and 600 exclusion overrides.

Daily recording cannot be specified for the following resource types:

- `AWS::Config::ResourceCompliance`
- `AWS::Config::ConformancePackCompliance`

- `AWS::Config::ConfigurationRecorder`

Considerations: Specific resource types

Region Availability

Before specifying a resource type for AWS Config to track, check Resource Coverage by Region Availability to see if the resource type is supported in the AWS Region where you set up AWS Config. If a resource type is supported by AWS Config in at least one Region, you can enable the recording of that resource type in all Regions supported by AWS Config, even if the specified resource type is not supported in the AWS Region where you set up AWS Config.

Limits

No limits if all resource types have the same frequency. You can add up to 100 resource types with Daily frequency if at least one resource type is set to Continuous.

The Daily frequency is not supported for the following resource types:

- `AWS::Config::ResourceCompliance`
- `AWS::Config::ConformancePackCompliance`
- `AWS::Config::ConfigurationRecorder`

Data governance

- For **Data retention period**, choose either the default retention period to retain AWS Config data for 7 years (2557) or set a custom rentention period for items recorded by AWS Config.

  AWS Config allows you to delete your data by specifying a retention period for your `ConfigurationItems`. When you specify a retention period, AWS Config retains your `ConfigurationItems` for that specified period. You can choose a period between a minimum of 30 days and a maximum of 7 years (2557 days). AWS Config deletes data older than your specified retention period.
- For **IAM role for AWS Config**, choose either an existing AWS Config service-linked role or an IAM role from your account.
  - Service-linked roles are predefined by AWS Config and include all the permissions that the service requires to call other AWS services.

> **Note**
>
> **Recommended: Use the Service-linked role**
> It is recommended that you use the service-linked role. A service-linked role adds all the necessary permissions for AWS Config to run as expected.

- Otherwise, choose an IAM role from one of your pre-existing roles and permission policies.

> **Note**
>
> **Policies and compliance results**
> IAM policies and other policies managed in AWS Organizations can impact whether AWS Config has permissions to record configuration changes for your resources. Additionally, rules directly evaluate the configuration of a resource and rules don't take into account these policies when running evaluations. Make sure that the policies in effect align with how you intend to use AWS Config.
> **Keep Minimum Permisions When Reusing an IAM role**
> If you use an AWS service that uses AWS Config, such as AWS Security Hub or AWS Control Tower, and an IAM role has already been created, make sure that the IAM role that you use when setting up AWS Config keeps the same minimum permissions as the pre-existing IAM role. You must do this to ensure that the other AWS service continues to run as expected.
> For example, if AWS Control Tower has an IAM role that allows AWS Config to read S3 objects, make sure that the same permissions are granted to the IAM role you use when setting up AWS Config. Otherwise, it may interfere with how AWS Control Tower operates.

Delivery method

- For **Delivery method**, choose the S3 bucket to which AWS Config sends configuration history and configuration snapshot files:
  - **Create a bucket** – For **S3 bucket name**, type a name for your S3 bucket.

    The name that you type must be unique across all existing bucket names in Amazon S3. One way to help ensure uniqueness is to include a prefix; for example, the name of your

organization. You can't change the bucket name after it is created. For more information, see Bucket Restrictions and Limitations in the *Amazon Simple Storage Service User Guide*.

- **Choose a bucket from your account** – For **S3 bucket name**, choose your preferred bucket.
- **Choose a bucket from another account** – For **S3 bucket name**, type the bucket name.

> **Note**
>
> **Bucket Permissions**
> If you choose a bucket from another account, that bucket must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon S3 Bucket for the AWS Config Delivery Channel.

- For **Amazon SNS topic**, choose **Stream configuration changes and notifications to an Amazon SNS topic** to have AWS Config send notifications such as configuration history delivery, configuration snapshot delivery, and compliance.
- If you chose to have AWS Config stream to an Amazon SNS topic, choose the target topic:
  - **Create a topic** – For **Topic Name**, type a name for your SNS topic.
  - **Choose a topic from your account** – For **Topic Name**, select your preferred topic.
  - **Choose a topic from another account** – For **Topic ARN**, type the Amazon Resource Name (ARN) of the topic. If you choose a topic from another account, the topic must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon SNS Topic.

> **Note**
>
> **Region for the Amazon SNS Topic**
> The Amazon SNS topic must exist in the same Region as the Region in which you set up AWS Config.

Step 2: Rules

If you are setting up AWS Config in a Region that supports rules, choose **Next**.

Step 3: Review

Review your AWS Config set up details. You can go back to edit changes for each section. Choose **Confirm** to finish setting up AWS Config.

For more information

For information about looking up the existing resources in your account and understanding the configurations of your resources, see Looking up Resources, Viewing Compliance Informance, and Viewing Compliance History.

You can also use Amazon Simple Queue Service to monitor AWS resources programmatically. For more information, see Monitoring AWS Resource Changes with Amazon SQS.

Setting Up AWS Config with the AWS CLI

The AWS CLI is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and use scripts to automate them. For more information about the AWS CLI and for instructions on installing the AWS CLI tools, see the following in the *AWS Command Line Interface User Guide*.

- AWS Command Line Interface User Guide
- Getting Set Up with the AWS Command Line Interface

If necessary, enter `aws configure` to configure the AWS CLI to use an AWS Region where AWS Config is available.

Setting up

See the following topics to set up AWS Config with the AWS CLI.

Topics

- Prerequisites for Setting Up AWS Config with the AWS CLI
- Starting AWS Config with a customer managed configuration recorder using the AWS CLI
- Verifying that AWS Config is Successfully Started with the AWS CLI

Prerequisites for Setting Up AWS Config with the AWS CLI

Before setting up AWS with the AWS CLI, you need to create an Amazon S3 bucket, an Amazon SNS topic, and an IAM role with attached policies as prerequisites. You can then use the AWS CLI to specify the bucket, topic, and role for AWS Config. Follow this procedure to set up your prerequisites for AWS Config.

Topics

- Step 1: Creating an Amazon S3 Bucket
- Step 2: Creating an Amazon SNS Topic
- Step 3: Creating an IAM Role

Step 1: Creating an Amazon S3 Bucket

If you already have an Amazon S3 bucket in your account and want to use it, skip this step and go to Step 2: Creating an Amazon SNS Topic.

Using the S3 console

To create a bucket

1. Open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. Choose **Create bucket**.
3. In **Bucket name**, enter a DNS-compliant name for your bucket.

   The bucket name must:

   - Be unique across all of Amazon S3.
   - Be between 3 and 63 characters long.
   - Not contain uppercase characters.
   - Start with a lowercase letter or number.

   After you create the bucket, you can't change its name. Make sure the bucket name you choose is unique across all existing bucket names in Amazon S3. For more information on bucket naming rules and conventions, see Bucket restrictions and Limitations in the *Amazon Simple Storage Service User Guide*.

> **Important**
>
> Avoid including sensitive information in the bucket name. The bucket name is visible in the URLs that point to the objects in the bucket.

4. In **Region**, choose the AWS Region where you want the bucket to reside.

   Choose a Region close to you to minimize latency and costs and address regulatory requirements. Objects stored in a Region never leave that Region unless you explicitly transfer them to another Region. For a list of Amazon S3 AWS Regions, see AWS service endpoints in the *Amazon Web Services General Reference*.

5. In **Bucket settings for Block Public Access**, choose the Block Public Access settings that you want to apply to the bucket.

   We recommend that you leave all settings enabled unless you know you need to turn one or more of them off for your use case, such as to host a public website. Block public access settings that you enable for the bucket will also be enabled for all access points that you create on the bucket. For more information about blocking public access, see Using Amazon S3 Block Public Access in the *Amazon Simple Storage Service User Guide*.

6. (Optional) If you want to enable S3 Object Lock:

   a. Choose **Advanced settings**, and read the message that appears.

   > **Important**
   >
   > You can only enable S3 Object Lock for a bucket when you create it. If you enable Object Lock for the bucket, you can't disable it later. Enabling Object Lock also enables versioning for the bucket. After you enable Object Lock for the bucket, you must configure the Object Lock settings before any objects in the bucket will be protected. For more information about configuring protection for objects, see Configuring S3 Object Lock using the Amazon S3 console.

   b. If you want to enable Object Lock, enter *enable* in the text box and choose **Confirm**.

   For more information about the S3 Object Lock feature, see Locking Objects Using Amazon S3 Object Lock in the *Amazon Simple Storage Service User Guide*.

7. Choose **Create bucket**.

Using the AWS SDKs

When you use the AWS SDKs to create a bucket, you must create a client and then use the client to send a request to create a bucket. As a best practice, you should create your client and bucket in the same AWS Region. If you don't specify a Region when you create a client or a bucket, Amazon S3 uses the default Region US East (N. Virginia).

To create a client to access a dual-stack endpoint, you must specify an AWS Region. For more information, see Amazon S3 dual-stack endpoints. For a list of available AWS Regions, see Regions and endpoints in the *AWS General Reference*.

When you create a client, the Region maps to the Region-specific endpoint. The client uses this endpoint to communicate with Amazon S3: `s3.<region>.amazonaws.com`. If your Region launched after March 20, 2019, your client and bucket must be in the same Region. However, you can use a client in the US East (N. Virginia) Region to create a bucket in any Region that launched before March 20, 2019. For more information, see Legacy Endpoints.

These AWS SDK code examples perform the following tasks:

- **Create a client by explicitly specifying an AWS Region** — In the example, the client uses the `s3.us-west-2.amazonaws.com` endpoint to communicate with Amazon S3. You can specify any AWS Region. For a list of AWS Regions, see Regions and endpoints in the *AWS General Reference*.
- **Send a create bucket request by specifying only a bucket name** — The client sends a request to Amazon S3 to create the bucket in the Region where you created a client.
- **Retrieve information about the location of the bucket** — Amazon S3 stores bucket location information in the *location* subresource that is associated with the bucket.

The following code examples show how to use `CreateBucket`.

.NET

SDK for .NET

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
        /// <summary>
        /// Shows how to create a new Amazon S3 bucket.
        /// </summary>
        /// <param name="client">An initialized Amazon S3 client object.</param>
        /// <param name="bucketName">The name of the bucket to create.</param>
        /// <returns>A boolean value representing the success or failure of
        /// the bucket creation process.</returns>
        public static async Task<bool> CreateBucketAsync(IAmazonS3 client, string
bucketName)
        {
            try
            {
                var request = new PutBucketRequest
                {
                    BucketName = bucketName,
                    UseClientRegion = true,
                };

                var response = await client.PutBucketAsync(request);
                return response.HttpStatusCode == System.Net.HttpStatusCode.OK;
            }
            catch (AmazonS3Exception ex)
            {
                Console.WriteLine($"Error creating bucket: '{ex.Message}'");
                return false;
            }
        }
```

Create a bucket with object lock enabled.

```
    /// <summary>
    /// Create a new Amazon S3 bucket with object lock actions.
    /// </summary>
    /// <param name="bucketName">The name of the bucket to create.</param>
    /// <param name="enableObjectLock">True to enable object lock on the
bucket.</param>
    /// <returns>True if successful.</returns>
    public async Task<bool> CreateBucketWithObjectLock(string bucketName, bool
enableObjectLock)
    {
        Console.WriteLine($"\tCreating bucket {bucketName} with object lock
{enableObjectLock}.");
        try
        {
            var request = new PutBucketRequest
            {
                BucketName = bucketName,
                UseClientRegion = true,
                ObjectLockEnabledForBucket = enableObjectLock,
            };

            var response = await _amazonS3.PutBucketAsync(request);

            return response.HttpStatusCode == System.Net.HttpStatusCode.OK;
        }
        catch (AmazonS3Exception ex)
        {
            Console.WriteLine($"Error creating bucket: '{ex.Message}'");
            return false;
        }
    }
```

- For API details, see CreateBucket in *AWS SDK for .NET API Reference*.

Bash

AWS CLI with Bash script

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
###############################################################################
# function iecho
#
# This function enables the script to display the specified text only if
# the global variable $VERBOSE is set to true.
###############################################################################
function iecho() {
  if [[ $VERBOSE == true ]]; then
    echo "$@"
  fi
}

###############################################################################
# function errecho
#
# This function outputs everything sent to it to STDERR (standard error output).
###############################################################################
function errecho() {
  printf "%s\n" "$*" 1>&2
}

###############################################################################
# function create-bucket
#
# This function creates the specified bucket in the specified AWS Region, unless
# it already exists.
#
# Parameters:
#       -b bucket_name  -- The name of the bucket to create.
#       -r region_code  -- The code for an AWS Region in which to
#                          create the bucket.
#
```

```
# Returns:
#       The URL of the bucket that was created.
#     And:
#       0 - If successful.
#       1 - If it fails.
###############################################################################
function create_bucket() {
  local bucket_name region_code response
  local option OPTARG # Required to use getopts command in a function.

  # bashsupport disable=BP5008
  function usage() {
    echo "function create_bucket"
    echo "Creates an Amazon S3 bucket. You must supply a bucket name:"
    echo "  -b bucket_name    The name of the bucket. It must be globally
 unique."
    echo "  [-r region_code]    The code for an AWS Region in which the bucket is
 created."
    echo ""
  }

  # Retrieve the calling parameters.
  while getopts "b:r:h" option; do
    case "${option}" in
      b) bucket_name="${OPTARG}" ;;
      r) region_code="${OPTARG}" ;;
      h)
        usage
        return 0
        ;;
      \?)
        echo "Invalid parameter"
        usage
        return 1
        ;;
    esac
  done

  if [[ -z "$bucket_name" ]]; then
    errecho "ERROR: You must provide a bucket name with the -b parameter."
    usage
    return 1
  fi
```

```
  local bucket_config_arg
  # A location constraint for "us-east-1" returns an error.
  if [[ -n "$region_code" ]] && [[ "$region_code" != "us-east-1" ]]; then
    bucket_config_arg="--create-bucket-configuration LocationConstraint=
$region_code"
  fi

  iecho "Parameters:\n"
  iecho "    Bucket name:   $bucket_name"
  iecho "    Region code:   $region_code"
  iecho ""

  # If the bucket already exists, we don't want to try to create it.
  if (bucket_exists "$bucket_name"); then
    errecho "ERROR: A bucket with that name already exists. Try again."
    return 1
  fi

  # shellcheck disable=SC2086
  response=$(aws s3api create-bucket \
    --bucket "$bucket_name" \
    $bucket_config_arg)

  # shellcheck disable=SC2181
  if [[ ${?} -ne 0 ]]; then
    errecho "ERROR: AWS reports create-bucket operation failed.\n$response"
    return 1
  fi
}
```

- For API details, see CreateBucket in *AWS CLI Command Reference*.

C++

SDK for C++

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
bool AwsDoc::S3::createBucket(const Aws::String &bucketName,
                              const Aws::S3::S3ClientConfiguration &clientConfig)
 {
    Aws::S3::S3Client client(clientConfig);
    Aws::S3::Model::CreateBucketRequest request;
    request.SetBucket(bucketName);

    if (clientConfig.region != "us-east-1") {
        Aws::S3::Model::CreateBucketConfiguration createBucketConfig;
        createBucketConfig.SetLocationConstraint(

 Aws::S3::Model::BucketLocationConstraintMapper::GetBucketLocationConstraintForName(
                        clientConfig.region));
        request.SetCreateBucketConfiguration(createBucketConfig);
    }

    Aws::S3::Model::CreateBucketOutcome outcome = client.CreateBucket(request);
    if (!outcome.IsSuccess()) {
        auto err = outcome.GetError();
        std::cerr << "Error: createBucket: " <<
                  err.GetExceptionName() << ": " << err.GetMessage() <<
 std::endl;
    } else {
        std::cout << "Created bucket " << bucketName <<
                  " in the specified AWS Region." << std::endl;
    }

    return outcome.IsSuccess();
}
```

- For API details, see CreateBucket in *AWS SDK for C++ API Reference*.

CLI

AWS CLI

Example 1: To create a bucket

The following `create-bucket` example creates a bucket named `amzn-s3-demo-bucket`:

```
aws s3api create-bucket \
```

```
    --bucket amzn-s3-demo-bucket \
    --region us-east-1
```

Output:

```
{
    "Location": "/amzn-s3-demo-bucket"
}
```

For more information, see Creating a bucket in the *Amazon S3 User Guide*.

Example 2: To create a bucket with owner enforced

The following `create-bucket` example creates a bucket named `amzn-s3-demo-bucket` that uses the bucket owner enforced setting for S3 Object Ownership.

```
aws s3api create-bucket \
    --bucket amzn-s3-demo-bucket \
    --region us-east-1 \
    --object-ownership BucketOwnerEnforced
```

Output:

```
{
    "Location": "/amzn-s3-demo-bucket"
}
```

For more information, see Controlling ownership of objects and disabling ACLs in the *Amazon S3 User Guide*.

Example 3: To create a bucket outside of the ``us-east-1`` region

The following `create-bucket` example creates a bucket named `amzn-s3-demo-bucket` in the `eu-west-1` region. Regions outside of `us-east-1` require the appropriate `LocationConstraint` to be specified in order to create the bucket in the desired region.

```
aws s3api create-bucket \
    --bucket amzn-s3-demo-bucket \
    --region eu-west-1 \
    --create-bucket-configuration LocationConstraint=eu-west-1
```

Output:

```
{
    "Location": "http://amzn-s3-demo-bucket.s3.amazonaws.com/"
}
```

For more information, see Creating a bucket in the *Amazon S3 User Guide*.

- For API details, see CreateBucket in *AWS CLI Command Reference*.

Go

SDK for Go V2

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create a bucket with default configuration.

```
import (
 "bytes"
 "context"
 "errors"
 "fmt"
 "io"
 "log"
 "os"
 "time"

 "github.com/aws/aws-sdk-go-v2/aws"
 "github.com/aws/aws-sdk-go-v2/feature/s3/manager"
 "github.com/aws/aws-sdk-go-v2/service/s3"
 "github.com/aws/aws-sdk-go-v2/service/s3/types"
 "github.com/aws/smithy-go"
)

// BucketBasics encapsulates the Amazon Simple Storage Service (Amazon S3)
 actions
```

```
// used in the examples.
// It contains S3Client, an Amazon S3 service client that is used to perform
 bucket
// and object actions.
type BucketBasics struct {
 S3Client *s3.Client
}



// CreateBucket creates a bucket with the specified name in the specified Region.
func (basics BucketBasics) CreateBucket(ctx context.Context, name string, region
 string) error {
 _, err := basics.S3Client.CreateBucket(ctx, &s3.CreateBucketInput{
  Bucket: aws.String(name),
  CreateBucketConfiguration: &types.CreateBucketConfiguration{
   LocationConstraint: types.BucketLocationConstraint(region),
  },
 })
 if err != nil {
  var owned *types.BucketAlreadyOwnedByYou
  var exists *types.BucketAlreadyExists
  if errors.As(err, &owned) {
   log.Printf("You already own bucket %s.\n", name)
   err = owned
  } else if errors.As(err, &exists) {
   log.Printf("Bucket %s already exists.\n", name)
   err = exists
  }
 } else {
  err = s3.NewBucketExistsWaiter(basics.S3Client).Wait(
   ctx, &s3.HeadBucketInput{Bucket: aws.String(name)}, time.Minute)
  if err != nil {
   log.Printf("Failed attempt to wait for bucket %s to exist.\n", name)
  }
 }
 return err
}
```

Create a bucket with object locking and wait for it to exist.

```
import (
 "bytes"
 "context"
 "errors"
 "fmt"
 "log"
 "time"

 "github.com/aws/aws-sdk-go-v2/aws"
 "github.com/aws/aws-sdk-go-v2/feature/s3/manager"
 "github.com/aws/aws-sdk-go-v2/service/s3"
 "github.com/aws/aws-sdk-go-v2/service/s3/types"
 "github.com/aws/smithy-go"
)

// S3Actions wraps S3 service actions.
type S3Actions struct {
 S3Client  *s3.Client
 S3Manager *manager.Uploader
}



// CreateBucketWithLock creates a new S3 bucket with optional object locking
 enabled
// and waits for the bucket to exist before returning.
func (actor S3Actions) CreateBucketWithLock(ctx context.Context, bucket string,
 region string, enableObjectLock bool) (string, error) {
 input := &s3.CreateBucketInput{
  Bucket: aws.String(bucket),
  CreateBucketConfiguration: &types.CreateBucketConfiguration{
   LocationConstraint: types.BucketLocationConstraint(region),
  },
 }

 if enableObjectLock {
  input.ObjectLockEnabledForBucket = aws.Bool(true)
 }

 _, err := actor.S3Client.CreateBucket(ctx, input)
 if err != nil {
  var owned *types.BucketAlreadyOwnedByYou
```

```
  var exists *types.BucketAlreadyExists
  if errors.As(err, &owned) {
   log.Printf("You already own bucket %s.\n", bucket)
   err = owned
  } else if errors.As(err, &exists) {
   log.Printf("Bucket %s already exists.\n", bucket)
   err = exists
  }
 } else {
  err = s3.NewBucketExistsWaiter(actor.S3Client).Wait(
   ctx, &s3.HeadBucketInput{Bucket: aws.String(bucket)}, time.Minute)
  if err != nil {
   log.Printf("Failed attempt to wait for bucket %s to exist.\n", bucket)
  }
 }

 return bucket, err
}
```

- For API details, see CreateBucket in *AWS SDK for Go API Reference*.

Java

SDK for Java 2.x

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create a bucket.

```
    /**
     * Creates an S3 bucket asynchronously.
     *
     * @param bucketName the name of the S3 bucket to create
     * @return a {@link CompletableFuture} that completes when the bucket is
 created and ready
```

```
     * @throws RuntimeException if there is a failure while creating the bucket
     */
    public CompletableFuture<Void> createBucketAsync(String bucketName) {
        CreateBucketRequest bucketRequest = CreateBucketRequest.builder()
            .bucket(bucketName)
            .build();

        CompletableFuture<CreateBucketResponse> response =
getAsyncClient().createBucket(bucketRequest);
        return response.thenCompose(resp -> {
            S3AsyncWaiter s3Waiter = getAsyncClient().waiter();
            HeadBucketRequest bucketRequestWait = HeadBucketRequest.builder()
                .bucket(bucketName)
                .build();

            CompletableFuture<WaiterResponse<HeadBucketResponse>>
waiterResponseFuture =
                s3Waiter.waitUntilBucketExists(bucketRequestWait);
            return waiterResponseFuture.thenAccept(waiterResponse -> {
                waiterResponse.matched().response().ifPresent(headBucketResponse
-> {
                    logger.info(bucketName + " is ready");
                });
            });
        }).whenComplete((resp, ex) -> {
            if (ex != null) {
                throw new RuntimeException("Failed to create bucket", ex);
            }
        });
    }
```

Create a bucket with object lock enabled.

```
    // Create a new Amazon S3 bucket with object lock options.
    public void createBucketWithLockOptions(boolean enableObjectLock, String
bucketName) {
        S3Waiter s3Waiter = getClient().waiter();
        CreateBucketRequest bucketRequest = CreateBucketRequest.builder()
            .bucket(bucketName)
            .objectLockEnabledForBucket(enableObjectLock)
            .build();
```

```
        getClient().createBucket(bucketRequest);
        HeadBucketRequest bucketRequestWait = HeadBucketRequest.builder()
            .bucket(bucketName)
            .build();

        // Wait until the bucket is created and print out the response.
        s3Waiter.waitUntilBucketExists(bucketRequestWait);
        System.out.println(bucketName + " is ready");
    }
```

- For API details, see CreateBucket in *AWS SDK for Java 2.x API Reference*.

JavaScript

SDK for JavaScript (v3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create the bucket.

```
import {
  BucketAlreadyExists,
  BucketAlreadyOwnedByYou,
  CreateBucketCommand,
  S3Client,
  waitUntilBucketExists,
} from "@aws-sdk/client-s3";

/**
 * Create an Amazon S3 bucket.
 * @param {{ bucketName: string }} config
 */
export const main = async ({ bucketName }) => {
  const client = new S3Client({});

  try {
    const { Location } = await client.send(
```

```
      new CreateBucketCommand({
        // The name of the bucket. Bucket names are unique and have several other
 constraints.
        // See https://docs.aws.amazon.com/AmazonS3/latest/userguide/
bucketnamingrules.html
        Bucket: bucketName,
      }),
    );
    await waitUntilBucketExists({ client }, { Bucket: bucketName });
    console.log(`Bucket created with location ${Location}`);
  } catch (caught) {
    if (caught instanceof BucketAlreadyExists) {
      console.error(
        `The bucket "${bucketName}" already exists in another AWS account. Bucket
 names must be globally unique.`,
      );
    }
    // WARNING: If you try to create a bucket in the North Virginia region,
    // and you already own a bucket in that region with the same name, this
    // error will not be thrown. Instead, the call will return successfully
    // and the ACL on that bucket will be reset.
    else if (caught instanceof BucketAlreadyOwnedByYou) {
      console.error(
        `The bucket "${bucketName}" already exists in this AWS account.`,
      );
    } else {
      throw caught;
    }
  }
};
```

- For more information, see AWS SDK for JavaScript Developer Guide.
- For API details, see CreateBucket in *AWS SDK for JavaScript API Reference*.

Kotlin

SDK for Kotlin

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
suspend fun createNewBucket(bucketName: String) {
    val request =
        CreateBucketRequest {
            bucket = bucketName
        }

    S3Client { region = "us-east-1" }.use { s3 ->
        s3.createBucket(request)
        println("$bucketName is ready")
    }
}
```

- For API details, see CreateBucket in *AWS SDK for Kotlin API reference*.

PHP

SDK for PHP

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create a bucket.

```
        $s3client = new Aws\S3\S3Client(['region' => 'us-west-2']);

        try {
```

```
            $this->s3client->createBucket([
                'Bucket' => $this->bucketName,
                'CreateBucketConfiguration' => ['LocationConstraint' => $region],
            ]);
            echo "Created bucket named: $this->bucketName \n";
        } catch (Exception $exception) {
            echo "Failed to create bucket $this->bucketName with error: " .
 $exception->getMessage();
            exit("Please fix error with bucket creation before continuing.");
        }
```

- For API details, see CreateBucket in *AWS SDK for PHP API Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create a bucket with default settings.

```
class BucketWrapper:
    """Encapsulates S3 bucket actions."""

    def __init__(self, bucket):
        """
        :param bucket: A Boto3 Bucket resource. This is a high-level resource in
 Boto3
                       that wraps bucket actions in a class-like structure.
        """
        self.bucket = bucket
        self.name = bucket.name


    def create(self, region_override=None):
        """
```

```
        Create an Amazon S3 bucket in the default Region for the account or in
 the
        specified Region.

        :param region_override: The Region in which to create the bucket. If this
 is
                                not specified, the Region configured in your
 shared
                                credentials is used.
        """
        if region_override is not None:
            region = region_override
        else:
            region = self.bucket.meta.client.meta.region_name
        try:
            self.bucket.create(CreateBucketConfiguration={"LocationConstraint":
 region})

            self.bucket.wait_until_exists()
            logger.info("Created bucket '%s' in region=%s", self.bucket.name,
 region)
        except ClientError as error:
            logger.exception(
                "Couldn't create bucket named '%s' in region=%s.",
                self.bucket.name,
                region,
            )
            raise error
```

Create a versioned bucket with a lifecycle configuration.

```
def create_versioned_bucket(bucket_name, prefix):
    """
    Creates an Amazon S3 bucket, enables it for versioning, and configures a
 lifecycle
    that expires noncurrent object versions after 7 days.

    Adding a lifecycle configuration to a versioned bucket is a best practice.
    It helps prevent objects in the bucket from accumulating a large number of
    noncurrent versions, which can slow down request performance.
```

```
    Usage is shown in the usage_demo_single_object function at the end of this
module.

    :param bucket_name: The name of the bucket to create.
    :param prefix: Identifies which objects are automatically expired under the
                   configured lifecycle rules.
    :return: The newly created bucket.
    """
    try:
        bucket = s3.create_bucket(
            Bucket=bucket_name,
            CreateBucketConfiguration={
                "LocationConstraint": s3.meta.client.meta.region_name
            },
        )
        logger.info("Created bucket %s.", bucket.name)
    except ClientError as error:
        if error.response["Error"]["Code"] == "BucketAlreadyOwnedByYou":
            logger.warning("Bucket %s already exists! Using it.", bucket_name)
            bucket = s3.Bucket(bucket_name)
        else:
            logger.exception("Couldn't create bucket %s.", bucket_name)
            raise

    try:
        bucket.Versioning().enable()
        logger.info("Enabled versioning on bucket %s.", bucket.name)
    except ClientError:
        logger.exception("Couldn't enable versioning on bucket %s.", bucket.name)
        raise

    try:
        expiration = 7
        bucket.LifecycleConfiguration().put(
            LifecycleConfiguration={
                "Rules": [
                    {
                        "Status": "Enabled",
                        "Prefix": prefix,
                        "NoncurrentVersionExpiration": {"NoncurrentDays":
expiration},
                    }
                ]
            }
```

```
        )
        logger.info(
            "Configured lifecycle to expire noncurrent versions after %s days "
            "on bucket %s.",
            expiration,
            bucket.name,
        )
    except ClientError as error:
        logger.warning(
            "Couldn't configure lifecycle on bucket %s because %s. "
            "Continuing anyway.",
            bucket.name,
            error,
        )

    return bucket
```

- For API details, see CreateBucket in *AWS SDK for Python (Boto3) API Reference*.

Ruby

SDK for Ruby

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
require 'aws-sdk-s3'

# Wraps Amazon S3 bucket actions.
class BucketCreateWrapper
  attr_reader :bucket

  # @param bucket [Aws::S3::Bucket] An Amazon S3 bucket initialized with a name.
 This is a client-side object until
  #                                 create is called.
  def initialize(bucket)
```

```
    @bucket = bucket
  end

  # Creates an Amazon S3 bucket in the specified AWS Region.
  #
  # @param region [String] The Region where the bucket is created.
  # @return [Boolean] True when the bucket is created; otherwise, false.
  def create?(region)
    @bucket.create(create_bucket_configuration: { location_constraint: region })
    true
  rescue Aws::Errors::ServiceError => e
    puts "Couldn't create bucket. Here's why: #{e.message}"
    false
  end

  # Gets the Region where the bucket is located.
  #
  # @return [String] The location of the bucket.
  def location
    if @bucket.nil?
      'None. You must create a bucket before you can get its location!'
    else
      @bucket.client.get_bucket_location(bucket:
 @bucket.name).location_constraint
    end
  rescue Aws::Errors::ServiceError => e
    "Couldn't get the location of #{@bucket.name}. Here's why: #{e.message}"
  end
end

# Example usage:
def run_demo
  region = "us-west-2"
  wrapper = BucketCreateWrapper.new(Aws::S3::Bucket.new("amzn-s3-demo-bucket-
#{Random.uuid}"))
  return unless wrapper.create?(region)

  puts "Created bucket #{wrapper.bucket.name}."
  puts "Your bucket's region is: #{wrapper.location}"
end

run_demo if $PROGRAM_NAME == __FILE__
```

- For API details, see CreateBucket in *AWS SDK for Ruby API Reference*.

Rust

SDK for Rust

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
pub async fn create_bucket(
    client: &aws_sdk_s3::Client,
    bucket_name: &str,
    region: &aws_config::Region,
) -> Result<Option<aws_sdk_s3::operation::create_bucket::CreateBucketOutput>,
 S3ExampleError> {
    let constraint =
 aws_sdk_s3::types::BucketLocationConstraint::from(region.to_string().as_str());
    let cfg = aws_sdk_s3::types::CreateBucketConfiguration::builder()
        .location_constraint(constraint)
        .build();
    let create = client
        .create_bucket()
        .create_bucket_configuration(cfg)
        .bucket(bucket_name)
        .send()
        .await;

    // BucketAlreadyExists and BucketAlreadyOwnedByYou are not problems for this
 task.
    create.map(Some).or_else(|err| {
        if err
            .as_service_error()
            .map(|se| se.is_bucket_already_exists() ||
 se.is_bucket_already_owned_by_you())
            == Some(true)
        {
            Ok(None)
        } else {
            Err(S3ExampleError::from(err))
```

```
        }
    })
}
```

- For API details, see CreateBucket in *AWS SDK for Rust API reference*.

SAP ABAP

SDK for SAP ABAP

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
    TRY.
        " determine our region from our session
        DATA(lv_region) = CONV /aws1/s3_bucketlocationcnstrnt( lo_session-
>get_region( ) ).
        DATA lo_constraint TYPE REF TO /aws1/cl_s3_createbucketconf.
        " When in the us-east-1 region, you must not specify a constraint
        " In all other regions, specify the region as the constraint
        IF lv_region = 'us-east-1'.
          CLEAR lo_constraint.
        ELSE.
          lo_constraint = NEW /aws1/cl_s3_createbucketconf( lv_region ).
        ENDIF.

        lo_s3->createbucket(
            iv_bucket = iv_bucket_name
            io_createbucketconfiguration  = lo_constraint ).
        MESSAGE 'S3 bucket created.' TYPE 'I'.
      CATCH /aws1/cx_s3_bucketalrdyexists.
        MESSAGE 'Bucket name already exists.' TYPE 'E'.
      CATCH /aws1/cx_s3_bktalrdyownedbyyou.
        MESSAGE 'Bucket already exists and is owned by you.' TYPE 'E'.
    ENDTRY.
```

- For API details, see CreateBucket in *AWS SDK for SAP ABAP API reference*.

Swift

SDK for Swift

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import AWSS3

    public func createBucket(name: String) async throws {
        var input = CreateBucketInput(
            bucket: name
        )

        // For regions other than "us-east-1", you must set the
 locationConstraint in the createBucketConfiguration.
        // For more information, see LocationConstraint in the S3 API guide.
        // https://docs.aws.amazon.com/AmazonS3/latest/API/
API_CreateBucket.html#API_CreateBucket_RequestBody
        if let region = configuration.region {
            if region != "us-east-1" {
                input.createBucketConfiguration =
 S3ClientTypes.CreateBucketConfiguration(locationConstraint:
 S3ClientTypes.BucketLocationConstraint(rawValue: region))
            }
        }

        do {
            _ = try await client.createBucket(input: input)
        }
        catch let error as BucketAlreadyOwnedByYou {
            print("The bucket '\(name)' already exists and is owned by you. You
 may wish to ignore this exception.")
            throw error
        }
        catch {
            print("ERROR: ", dump(error, name: "Creating a bucket"))
```

```
            throw error
        }
    }
```

- For API details, see CreateBucket in *AWS SDK for Swift API reference*.

> **Note**
>
> You can also use an Amazon S3 bucket from a different account, but you may need to create a policy for the bucket that grants access permissions to AWS Config. For information on granting permissions to an Amazon S3 bucket, see Permissions for the Amazon S3 Bucket for the AWS Config Delivery Channel, and then go to Step 2: Creating an Amazon SNS Topic.

Step 2: Creating an Amazon SNS Topic

If you already have an Amazon SNS topic in your account and want to use it, skip this step and go to Step 3: Creating an IAM Role.

Using the SNS console

To create an Amazon SNS topic

1. Open the Amazon SNS console at https://console.aws.amazon.com/sns/v3/home.
2. Do one of the following:
   - If no topics have ever been created under your AWS account before, read the description of Amazon SNS on the home page.
   - If topics have been created under your AWS account before, on the navigation panel, choose **Topics**.
3. On the **Topics** page, choose **Create topic**.
4. On the **Create topic** page, in the **Details** section, do the following:
   a. For **Type**, choose a topic type (**Standard** or **FIFO**).
   b. Enter a **Name** for the topic. For a FIFO topic, add **.fifo** to the end of the name.

c. (Optional) Enter a **Display name** for the topic.

d. (Optional) For a FIFO topic, you can choose **content-based message deduplication** to enable default message deduplication. For more information, see Message deduplication for FIFO topics.

5. (Optional) Expand the **Encryption** section and do the following. For more information, see Encryption at rest.

   a. Choose **Enable encryption**.

   b. Specify the customer master key (CMK). For more information, see Key terms.

      For each CMK type, the **Description**, **Account**, and **CMK ARN** are displayed.

      > **Important**
      >
      > If you aren't the owner of the CMK, or if you log in with an account that doesn't have the `kms:ListAliases` and `kms:DescribeKey` permissions, you won't be able to view information about the CMK on the Amazon SNS console.
      > Ask the owner of the CMK to grant you these permissions. For more information, see the AWS KMS API Permissions: Actions and Resources Reference in the *AWS Key Management Service Developer Guide*.

      - The AWS managed CMK for Amazon SNS **(Default) alias/aws/sns** is selected by default.

        > **Note**
        >
        > Keep the following in mind:
        >
        > - The first time you use the AWS Management Console to specify the AWS managed CMK for Amazon SNS for a topic, AWS KMS creates the AWS managed CMK for Amazon SNS.
        > - Alternatively, the first time you use the `Publish` action on a topic with SSE enabled, AWS KMS creates the AWS managed CMK for Amazon SNS.

      - To use a custom CMK from your AWS account, choose the **Customer master key (CMK)** field and then choose the custom CMK from the list.

> **Note**
>
> For instructions on creating custom CMKs, see Creating Keys in the *AWS Key Management Service Developer Guide*

- To use a custom CMK ARN from your AWS account or from another AWS account, enter it into the **Customer master key (CMK)** field.

6. (Optional) By default, only the topic owner can publish or subscribe to the topic. To configure additional access permissions, expand the **Access policy** section. For more information, see Identity and access management in Amazon SNS and Example cases for Amazon SNS access control.

> **Note**
>
> When you create a topic using the console, the default policy uses the `aws:SourceOwner` condition key. This key is similar to `aws:SourceAccount`.

7. (Optional) To configure how Amazon SNS retries failed message delivery attempts, expand the **Delivery retry policy (HTTP/S)** section. For more information, see Amazon SNS message delivery retries.
8. (Optional) To configure how Amazon SNS logs the delivery of messages to CloudWatch, expand the **Delivery status logging** section. For more information, see Amazon SNS message delivery status.
9. (Optional) To add metadata tags to the topic, expand the **Tags** section, enter a **Key** and a **Value** (optional) and choose **Add tag**. For more information, see Amazon SNS topic tagging.
10. Choose **Create topic**.

    The topic is created and the ***MyTopic*** page is displayed.

    The topic's **Name**, **ARN**, (optional) **Display name**, and **Topic owner**'s AWS account ID are displayed in the **Details** section.
11. Copy the topic ARN to the clipboard, for example:

```
arn:aws:sns:us-east-2:123456789012:MyTopic
```

To subscribe an email address to the Amazon SNS topic

1. Open the Amazon SNS console at https://console.aws.amazon.com/sns/v3/home.
2. In the left navigation pane, choose **Subscriptions**.
3. On the **Subscriptions** page, choose **Create subscription**.
4. On the **Create subscription** page, in the **Details** section, do the following:

   a. For **Topic ARN**, choose the Amazon Resource Name (ARN) of a topic.

   b. For **Protocol**, choose an endpoint type. The available endpoint types are:

      - HTTP/HTTPS
      - Email/Email-JSON
      - Amazon Data Firehose
      - Amazon SQS

      > **Note**
      >
      > To subscribe to an SNS FIFO topic, choose this option.

      - AWS Lambda
      - Platform application endpoint
      - SMS

   c. For **Endpoint**, enter the endpoint value, such as an email address or the ARN of an Amazon SQS queue.

   d. Firehose endpoints only: For **Subscription role ARN**, specify the ARN of the IAM role that you created for writing to Firehose delivery streams. For more information, see Prerequisites for subscribing Firehose delivery streams to Amazon SNS topics.

   e. (Optional) For Firehose, Amazon SQS, HTTP/S endpoints, you can also enable raw message delivery. For more information, see Amazon SNS raw message delivery.

   f. (Optional) To configure a filter policy, expand the **Subscription filter policy** section. For more information, see Amazon SNS subscription filter policies.

   g. (Optional) To configure a dead-letter queue for the subscription, expand the **Redrive policy (dead-letter queue)** section. For more information, see Amazon SNS dead-letter queues (DLQs).

   h. Choose **Create subscription**.

The console creates the subscription and opens the subscription's **Details** page.

Using the AWS SDKs

To use an AWS SDK, you must configure it with your credentials. For more information, see The shared config and credentials files in the *AWS SDKs and Tools Reference Guide*.

The following code examples show how to use `CreateTopic`.

.NET

SDK for .NET

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create a topic with a specific name.

```
using System;
using System.Threading.Tasks;
using Amazon.SimpleNotificationService;
using Amazon.SimpleNotificationService.Model;

/// <summary>
/// This example shows how to use Amazon Simple Notification Service
/// (Amazon SNS) to add a new Amazon SNS topic.
/// </summary>
public class CreateSNSTopic
{
    public static async Task Main()
    {
        string topicName = "ExampleSNSTopic";

        IAmazonSimpleNotificationService client = new
AmazonSimpleNotificationServiceClient();

        var topicArn = await CreateSNSTopicAsync(client, topicName);
        Console.WriteLine($"New topic ARN: {topicArn}");
```

```
        }

        /// <summary>
        /// Creates a new SNS topic using the supplied topic name.
        /// </summary>
        /// <param name="client">The initialized SNS client object used to
        /// create the new topic.</param>
        /// <param name="topicName">A string representing the topic name.</param>
        /// <returns>The Amazon Resource Name (ARN) of the created topic.</
returns>
        public static async Task<string>
 CreateSNSTopicAsync(IAmazonSimpleNotificationService client, string topicName)
        {
            var request = new CreateTopicRequest
            {
                Name = topicName,
            };

            var response = await client.CreateTopicAsync(request);

            return response.TopicArn;
        }
    }
```

Create a new topic with a name and specific FIFO and de-duplication attributes.

```
    /// <summary>
    /// Create a new topic with a name and specific FIFO and de-duplication
 attributes.
    /// </summary>
    /// <param name="topicName">The name for the topic.</param>
    /// <param name="useFifoTopic">True to use a FIFO topic.</param>
    /// <param name="useContentBasedDeduplication">True to use content-based de-
duplication.</param>
    /// <returns>The ARN of the new topic.</returns>
    public async Task<string> CreateTopicWithName(string topicName, bool
 useFifoTopic, bool useContentBasedDeduplication)
    {
        var createTopicRequest = new CreateTopicRequest()
        {
            Name = topicName,
```

```
        };

        if (useFifoTopic)
        {
            // Update the name if it is not correct for a FIFO topic.
            if (!topicName.EndsWith(".fifo"))
            {
                createTopicRequest.Name = topicName + ".fifo";
            }

            // Add the attributes from the method parameters.
            createTopicRequest.Attributes = new Dictionary<string, string>
            {
                { "FifoTopic", "true" }
            };
            if (useContentBasedDeduplication)
            {
                createTopicRequest.Attributes.Add("ContentBasedDeduplication",
"true");
            }
        }

        var createResponse = await
_amazonSNSClient.CreateTopicAsync(createTopicRequest);
        return createResponse.TopicArn;
    }
```

- For API details, see CreateTopic in *AWS SDK for .NET API Reference*.

C++

SDK for C++

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
//! Create an Amazon Simple Notification Service (Amazon SNS) topic.
/*!
```

```
  \param topicName: An Amazon SNS topic name.
  \param topicARNResult: String to return the Amazon Resource Name (ARN) for the
 topic.
  \param clientConfiguration: AWS client configuration.
  \return bool: Function succeeded.
 */
bool AwsDoc::SNS::createTopic(const Aws::String &topicName,
                              Aws::String &topicARNResult,
                              const Aws::Client::ClientConfiguration
 &clientConfiguration) {
    Aws::SNS::SNSClient snsClient(clientConfiguration);

    Aws::SNS::Model::CreateTopicRequest request;
    request.SetName(topicName);

    const Aws::SNS::Model::CreateTopicOutcome outcome =
 snsClient.CreateTopic(request);

    if (outcome.IsSuccess()) {
        topicARNResult = outcome.GetResult().GetTopicArn();
        std::cout << "Successfully created an Amazon SNS topic " << topicName
                  << " with topic ARN '" << topicARNResult
                  << "'." << std::endl;

    }
    else {
        std::cerr << "Error creating topic " << topicName << ":" <<
                  outcome.GetError().GetMessage() << std::endl;
        topicARNResult.clear();
    }

    return outcome.IsSuccess();
}
```

- For API details, see CreateTopic in *AWS SDK for C++ API Reference*.

CLI

AWS CLI

To create an SNS topic

The following `create-topic` example creates an SNS topic named `my-topic`.

```
aws sns create-topic \
    --name my-topic
```

Output:

```
{
    "ResponseMetadata": {
        "RequestId": "1469e8d7-1642-564e-b85d-a19b4b341f83"
    },
    "TopicArn": "arn:aws:sns:us-west-2:123456789012:my-topic"
}
```

For more information, see Using the AWS Command Line Interface with Amazon SQS and Amazon SNS in the *AWS Command Line Interface User Guide*.

- For API details, see CreateTopic in *AWS CLI Command Reference*.

Go

SDK for Go V2

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import (
 "context"
 "encoding/json"
 "log"

 "github.com/aws/aws-sdk-go-v2/aws"
 "github.com/aws/aws-sdk-go-v2/service/sns"
 "github.com/aws/aws-sdk-go-v2/service/sns/types"
)
```

```
// SnsActions encapsulates the Amazon Simple Notification Service (Amazon SNS)
 actions
// used in the examples.
type SnsActions struct {
 SnsClient *sns.Client
}



// CreateTopic creates an Amazon SNS topic with the specified name. You can
 optionally
// specify that the topic is created as a FIFO topic and whether it uses content-
based
// deduplication instead of ID-based deduplication.
func (actor SnsActions) CreateTopic(ctx context.Context, topicName string,
 isFifoTopic bool, contentBasedDeduplication bool) (string, error) {
 var topicArn string
 topicAttributes := map[string]string{}
 if isFifoTopic {
  topicAttributes["FifoTopic"] = "true"
 }
 if contentBasedDeduplication {
  topicAttributes["ContentBasedDeduplication"] = "true"
 }
 topic, err := actor.SnsClient.CreateTopic(ctx, &sns.CreateTopicInput{
  Name:       aws.String(topicName),
  Attributes: topicAttributes,
 })
 if err != nil {
  log.Printf("Couldn't create topic %v. Here's why: %v\n", topicName, err)
 } else {
  topicArn = *topic.TopicArn
 }

 return topicArn, err
}
```

- For API details, see CreateTopic in *AWS SDK for Go API Reference*.

Java

SDK for Java 2.x

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import software.amazon.awssdk.regions.Region;
import software.amazon.awssdk.services.sns.SnsClient;
import software.amazon.awssdk.services.sns.model.CreateTopicRequest;
import software.amazon.awssdk.services.sns.model.CreateTopicResponse;
import software.amazon.awssdk.services.sns.model.SnsException;

/**
 * Before running this Java V2 code example, set up your development
 * environment, including your credentials.
 *
 * For more information, see the following documentation topic:
 *
 * https://docs.aws.amazon.com/sdk-for-java/latest/developer-guide/get-
started.html
 */
public class CreateTopic {
    public static void main(String[] args) {
        final String usage = """

                Usage:    <topicName>

                Where:
                   topicName - The name of the topic to create (for example,
 mytopic).

                """;

        if (args.length != 1) {
            System.out.println(usage);
            System.exit(1);
        }
```

```
        String topicName = args[0];
        System.out.println("Creating a topic with name: " + topicName);
        SnsClient snsClient = SnsClient.builder()
                .region(Region.US_EAST_1)
                .build();

        String arnVal = createSNSTopic(snsClient, topicName);
        System.out.println("The topic ARN is" + arnVal);
        snsClient.close();
    }

    public static String createSNSTopic(SnsClient snsClient, String topicName) {
        CreateTopicResponse result;
        try {
            CreateTopicRequest request = CreateTopicRequest.builder()
                    .name(topicName)
                    .build();

            result = snsClient.createTopic(request);
            return result.topicArn();

        } catch (SnsException e) {
            System.err.println(e.awsErrorDetails().errorMessage());
            System.exit(1);
        }
        return "";
    }
}
```

- For API details, see CreateTopic in *AWS SDK for Java 2.x API Reference*.

JavaScript

SDK for JavaScript (v3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create the client in a separate module and export it.

```
import { SNSClient } from "@aws-sdk/client-sns";

// The AWS Region can be provided here using the `region` property. If you leave
 it blank
// the SDK will default to the region set in your AWS config.
export const snsClient = new SNSClient({});
```

Import the SDK and client modules and call the API.

```
import { CreateTopicCommand } from "@aws-sdk/client-sns";
import { snsClient } from "../libs/snsClient.js";

/**
 * @param {string} topicName - The name of the topic to create.
 */
export const createTopic = async (topicName = "TOPIC_NAME") => {
  const response = await snsClient.send(
    new CreateTopicCommand({ Name: topicName }),
  );
  console.log(response);
  // {
  //   '$metadata': {
  //     httpStatusCode: 200,
  //     requestId: '087b8ad2-4593-50c4-a496-d7e90b82cf3e',
  //     extendedRequestId: undefined,
  //     cfId: undefined,
  //     attempts: 1,
  //     totalRetryDelay: 0
  //   },
  //   TopicArn: 'arn:aws:sns:us-east-1:xxxxxxxxxxxx:TOPIC_NAME'
  // }
  return response;
};
```

- For more information, see AWS SDK for JavaScript Developer Guide.
- For API details, see CreateTopic in *AWS SDK for JavaScript API Reference*.

Kotlin

SDK for Kotlin

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
suspend fun createSNSTopic(topicName: String): String {
    val request =
        CreateTopicRequest {
            name = topicName
        }

    SnsClient { region = "us-east-1" }.use { snsClient ->
        val result = snsClient.createTopic(request)
        return result.topicArn.toString()
    }
}
```

- For API details, see CreateTopic in *AWS SDK for Kotlin API reference*.

PHP

SDK for PHP

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
require 'vendor/autoload.php';

use Aws\Exception\AwsException;
use Aws\Sns\SnsClient;
```

```
/**
 * Create a Simple Notification Service topics in your AWS account at the
 requested region.
 *
 * This code expects that you have AWS credentials set up per:
 * https://docs.aws.amazon.com/sdk-for-php/v3/developer-guide/
guide_credentials.html
 */

$SnSclient = new SnsClient([
    'profile' => 'default',
    'region' => 'us-east-1',
    'version' => '2010-03-31'
]);

$topicname = 'myTopic';

try {
    $result = $SnSclient->createTopic([
        'Name' => $topicname,
    ]);
    var_dump($result);
} catch (AwsException $e) {
    // output error message if fails
    error_log($e->getMessage());
}
```

- For more information, see AWS SDK for PHP Developer Guide.
- For API details, see CreateTopic in *AWS SDK for PHP API Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class SnsWrapper:
    """Encapsulates Amazon SNS topic and subscription functions."""

    def __init__(self, sns_resource):
        """
        :param sns_resource: A Boto3 Amazon SNS resource.
        """
        self.sns_resource = sns_resource


    def create_topic(self, name):
        """
        Creates a notification topic.

        :param name: The name of the topic to create.
        :return: The newly created topic.
        """
        try:
            topic = self.sns_resource.create_topic(Name=name)
            logger.info("Created topic %s with ARN %s.", name, topic.arn)
        except ClientError:
            logger.exception("Couldn't create topic %s.", name)
            raise
        else:
            return topic
```

- For API details, see CreateTopic in *AWS SDK for Python (Boto3) API Reference*.

Ruby

SDK for Ruby

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
# This class demonstrates how to create an Amazon Simple Notification Service
 (SNS) topic.
class SNSTopicCreator
  # Initializes an SNS client.
  #
  # Utilizes the default AWS configuration for region and credentials.
  def initialize
    @sns_client = Aws::SNS::Client.new
  end

  # Attempts to create an SNS topic with the specified name.
  #
  # @param topic_name [String] The name of the SNS topic to create.
  # @return [Boolean] true if the topic was successfully created, false
 otherwise.
  def create_topic(topic_name)
    @sns_client.create_topic(name: topic_name)
    puts "The topic '#{topic_name}' was successfully created."
    true
  rescue Aws::SNS::Errors::ServiceError => e
    # Handles SNS service errors gracefully.
    puts "Error while creating the topic named '#{topic_name}': #{e.message}"
    false
  end
end

# Example usage:
if $PROGRAM_NAME == __FILE__
  topic_name = 'YourTopicName' # Replace with your topic name
  sns_topic_creator = SNSTopicCreator.new

  puts "Creating the topic '#{topic_name}'..."
  unless sns_topic_creator.create_topic(topic_name)
    puts 'The topic was not created. Stopping program.'
    exit 1
  end
end
```

- For more information, see AWS SDK for Ruby Developer Guide.
- For API details, see CreateTopic in *AWS SDK for Ruby API Reference*.

Rust

SDK for Rust

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
async fn make_topic(client: &Client, topic_name: &str) -> Result<(), Error> {
    let resp = client.create_topic().name(topic_name).send().await?;

    println!(
        "Created topic with ARN: {}",
        resp.topic_arn().unwrap_or_default()
    );

    Ok(())
}
```

- For API details, see CreateTopic in *AWS SDK for Rust API reference*.

SAP ABAP

SDK for SAP ABAP

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
    TRY.
        oo_result = lo_sns->createtopic( iv_name = iv_topic_name ). " oo_result
 is returned for testing purposes. "
        MESSAGE 'SNS topic created' TYPE 'I'.
      CATCH /aws1/cx_snstopiclimitexcdex.
```

```
        MESSAGE 'Unable to create more topics. You have reached the maximum
 number of topics allowed.' TYPE 'E'.
    ENDTRY.
```

- For API details, see CreateTopic in *AWS SDK for SAP ABAP API reference*.

Swift

SDK for Swift

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import AWSSNS

        let config = try await SNSClient.SNSClientConfiguration(region: region)
        let snsClient = SNSClient(config: config)

        let output = try await snsClient.createTopic(
            input: CreateTopicInput(name: name)
        )

        guard let arn = output.topicArn else {
            print("No topic ARN returned by Amazon SNS.")
            return
        }
```

- For API details, see CreateTopic in *AWS SDK for Swift API reference*.

> **Note**
>
> You can also use an Amazon SNS topic in a different account, but in that case you might need to create a policy for topic that grants access permissions to AWS Config. For

information on granting permissions to an Amazon SNS topic, see Permissions for the Amazon SNS Topic and then go to Step 3: Creating an IAM Role.

Step 3: Creating an IAM Role

Important

(Recommended) Use the AWS Config service-linked role
It is recommended to use the AWS Config service-linked role: `AWSServiceRoleForConfig`. Service-linked roles are predefined and include all the permissions that AWS Config requires to call other AWS services. The AWS Config service-linked role is required for service-linked configuration recorders.
For more information, see Using Service-Linked Roles for AWS Config.

Using the IAM console

You can use the IAM console to create an IAM role that grants AWS Config permissions to access your Amazon S3 bucket, access your Amazon SNS topic, and get configuration details for supported AWS resources. When you use the console to create an IAM role, AWS Config automatically attaches the required permissions to the role for you.

Note

If you have used an AWS service that uses AWS Config (such as AWS Security Hub or AWS Control Tower) and an AWS Config role has already been created, you should make sure that the IAM role you use when setting up AWS Config keeps the same minimum privileges as the already created AWS Config role in order for the other AWS service to continue to run as expected.
For example, if AWS Control Tower has an IAM role that allows AWS Config to read Amazon S3 objects, you should guarantee the same permissions are granted within the IAM role you use when setting up AWS Config. Otherwise, it may interfere with AWS Control Tower's operations.
For more information about IAM roles for AWS Config, see AWS Identity and Access Management.

To create a role for an AWS service

1. Sign in to the AWS Management Console and open the IAM console at https://console.aws.amazon.com/iam/.
2. In the navigation pane of the IAM console, choose **Roles**, and then choose **Create role**.
3. For **Select trusted entity**, choose **AWS service**.
4. Choose the use case you want for AWS Config: **Config - Customizable**, **Config - Organizations**, **Config**, or **Config - Conformance Packs**. Then, choose **Next**.
5. On the **Name, review, and create** page, review the details about your role, and choose **Create Role**.

Using the AWS SDKs

To use an AWS SDK, you must configure it with your credentials. For more information, see The shared config and credentials files in the *AWS SDKs and Tools Reference Guide*.

The following code examples show how to use `CreateRole`.

.NET

SDK for .NET

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
    /// <summary>
    /// Create a new IAM role.
    /// </summary>
    /// <param name="roleName">The name of the IAM role.</param>
    /// <param name="rolePolicyDocument">The name of the IAM policy document
    /// for the new role.</param>
    /// <returns>The Amazon Resource Name (ARN) of the role.</returns>
    public async Task<string> CreateRoleAsync(string roleName, string
rolePolicyDocument)
    {
        var request = new CreateRoleRequest
```

```
        {
            RoleName = roleName,
            AssumeRolePolicyDocument = rolePolicyDocument,
        };

        var response = await _IAMService.CreateRoleAsync(request);
        return response.Role.Arn;
    }
```

- For API details, see CreateRole in *AWS SDK for .NET API Reference*.

Bash

AWS CLI with Bash script

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
###############################################################################
# function errecho
#
# This function outputs everything sent to it to STDERR (standard error output).
###############################################################################
function errecho() {
  printf "%s\n" "$*" 1>&2
}

###############################################################################
# function iam_create_role
#
# This function creates an IAM role.
#
# Parameters:
#       -n role_name -- The name of the IAM role.
#       -p policy_json -- The assume role policy document.
#
# Returns:
```

```
#       The ARN of the role.
#     And:
#       0 - If successful.
#       1 - If it fails.
###############################################################################
function iam_create_role() {
  local role_name policy_document response
  local option OPTARG # Required to use getopts command in a function.

  # bashsupport disable=BP5008
  function usage() {
    echo "function iam_create_user_access_key"
    echo "Creates an AWS Identity and Access Management (IAM) role."
    echo "  -n role_name   The name of the IAM role."
    echo "  -p policy_json -- The assume role policy document."
    echo ""
  }

  # Retrieve the calling parameters.
  while getopts "n:p:h" option; do
    case "${option}" in
      n) role_name="${OPTARG}" ;;
      p) policy_document="${OPTARG}" ;;
      h)
        usage
        return 0
        ;;
      \?)
        echo "Invalid parameter"
        usage
        return 1
        ;;
    esac
  done
  export OPTIND=1

  if [[ -z "$role_name" ]]; then
    errecho "ERROR: You must provide a role name with the -n parameter."
    usage
    return 1
  fi

  if [[ -z "$policy_document" ]]; then
    errecho "ERROR: You must provide a policy document with the -p parameter."
```

```
    usage
    return 1
  fi

  response=$(aws iam create-role \
    --role-name "$role_name" \
    --assume-role-policy-document "$policy_document" \
    --output text \
    --query Role.Arn)

  local error_code=${?}

  if [[ $error_code -ne 0 ]]; then
    aws_cli_error_log $error_code
    errecho "ERROR: AWS reports create-role operation failed.\n$response"
    return 1
  fi

  echo "$response"

  return 0
}
```

- For API details, see CreateRole in *AWS CLI Command Reference*.

C++

SDK for C++

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
bool AwsDoc::IAM::createIamRole(
        const Aws::String &roleName,
        const Aws::String &policy,
        const Aws::Client::ClientConfiguration &clientConfig) {
    Aws::IAM::IAMClient client(clientConfig);
    Aws::IAM::Model::CreateRoleRequest request;
```

```
    request.SetRoleName(roleName);
    request.SetAssumeRolePolicyDocument(policy);

    Aws::IAM::Model::CreateRoleOutcome outcome = client.CreateRole(request);
    if (!outcome.IsSuccess()) {
        std::cerr << "Error creating role. " <<
                  outcome.GetError().GetMessage() << std::endl;
    }
    else {
        const Aws::IAM::Model::Role iamRole = outcome.GetResult().GetRole();
        std::cout << "Created role " << iamRole.GetRoleName() << "\n";
        std::cout << "ID: " << iamRole.GetRoleId() << "\n";
        std::cout << "ARN: " << iamRole.GetArn() << std::endl;
    }

    return outcome.IsSuccess();
}
```

- For API details, see CreateRole in *AWS SDK for C++ API Reference*.

CLI

AWS CLI

Example 1: To create an IAM role

The following `create-role` command creates a role named `Test-Role` and attaches a trust policy to it.

```
aws iam create-role \
    --role-name Test-Role \
    --assume-role-policy-document file://Test-Role-Trust-Policy.json
```

Output:

```
{
    "Role": {
        "AssumeRolePolicyDocument": "<URL-encoded-JSON>",
        "RoleId": "AKIAIOSFODNN7EXAMPLE",
        "CreateDate": "2013-06-07T20:43:32.821Z",
```

```
        "RoleName": "Test-Role",
        "Path": "/",
        "Arn": "arn:aws:iam::123456789012:role/Test-Role"
    }
}
```

The trust policy is defined as a JSON document in the *Test-Role-Trust-Policy.json* file. (The file name and extension do not have significance.) The trust policy must specify a principal.

To attach a permissions policy to a role, use the `put-role-policy` command.

For more information, see Creating IAM roles in the *AWS IAM User Guide*.

Example 2: To create an IAM role with specified maximum session duration

The following `create-role` command creates a role named `Test-Role` and sets a maximum session duration of 7200 seconds (2 hours).

```
aws iam create-role \
    --role-name Test-Role \
    --assume-role-policy-document file://Test-Role-Trust-Policy.json \
    --max-session-duration 7200
```

Output:

```
{
    "Role": {
        "Path": "/",
        "RoleName": "Test-Role",
        "RoleId": "AKIAIOSFODNN7EXAMPLE",
        "Arn": "arn:aws:iam::12345678012:role/Test-Role",
        "CreateDate": "2023-05-24T23:50:25+00:00",
        "AssumeRolePolicyDocument": {
            "Version": "2012-10-17",
            "Statement": [
                {
                    "Sid": "Statement1",
                    "Effect": "Allow",
                    "Principal": {
                        "AWS": "arn:aws:iam::12345678012:root"
                    },
                    "Action": "sts:AssumeRole"
                }
```

```
            ]
        }
    }
}
```

For more information, see Modifying a role maximum session duration (AWS API) in the *AWS IAM User Guide*.

Example 3: To create an IAM Role with tags

The following command creates an IAM Role `Test-Role` with tags. This example uses the `--tags` parameter flag with the following JSON-formatted tags: `'{"Key": "Department", "Value": "Accounting"}' '{"Key": "Location", "Value": "Seattle"}'`. Alternatively, the `--tags` flag can be used with tags in the shorthand format: `'Key=Department,Value=Accounting Key=Location,Value=Seattle'`.

```
aws iam create-role \
    --role-name Test-Role \
    --assume-role-policy-document file://Test-Role-Trust-Policy.json \
    --tags '{"Key": "Department", "Value": "Accounting"}' '{"Key": "Location",
 "Value": "Seattle"}'
```

Output:

```
{
    "Role": {
        "Path": "/",
        "RoleName": "Test-Role",
        "RoleId": "AKIAIOSFODNN7EXAMPLE",
        "Arn": "arn:aws:iam::123456789012:role/Test-Role",
        "CreateDate": "2023-05-25T23:29:41+00:00",
        "AssumeRolePolicyDocument": {
            "Version": "2012-10-17",
            "Statement": [
                {
                    "Sid": "Statement1",
                    "Effect": "Allow",
                    "Principal": {
                        "AWS": "arn:aws:iam::123456789012:root"
                    },
                    "Action": "sts:AssumeRole"
                }
```

```
            ]
        },
        "Tags": [
            {
                "Key": "Department",
                "Value": "Accounting"
            },
            {
                "Key": "Location",
                "Value": "Seattle"
            }
        ]
    }
}
```

For more information, see Tagging IAM roles in the *AWS IAM User Guide*.

- For API details, see CreateRole in *AWS CLI Command Reference*.

Go

SDK for Go V2

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import (
 "context"
 "encoding/json"
 "log"

 "github.com/aws/aws-sdk-go-v2/aws"
 "github.com/aws/aws-sdk-go-v2/service/iam"
 "github.com/aws/aws-sdk-go-v2/service/iam/types"
)

// RoleWrapper encapsulates AWS Identity and Access Management (IAM) role actions
// used in the examples.
```

```
// It contains an IAM service client that is used to perform role actions.
type RoleWrapper struct {
 IamClient *iam.Client
}



// CreateRole creates a role that trusts a specified user. The trusted user can
 assume
// the role to acquire its permissions.
// PolicyDocument shows how to work with a policy document as a data structure
 and
// serialize it to JSON by using Go's JSON marshaler.
func (wrapper RoleWrapper) CreateRole(ctx context.Context, roleName string,
 trustedUserArn string) (*types.Role, error) {
 var role *types.Role
 trustPolicy := PolicyDocument{
  Version: "2012-10-17",
  Statement: []PolicyStatement{{
   Effect:    "Allow",
   Principal: map[string]string{"AWS": trustedUserArn},
   Action:    []string{"sts:AssumeRole"},
  }},
 }
 policyBytes, err := json.Marshal(trustPolicy)
 if err != nil {
  log.Printf("Couldn't create trust policy for %v. Here's why: %v\n",
 trustedUserArn, err)
  return nil, err
 }
 result, err := wrapper.IamClient.CreateRole(ctx, &iam.CreateRoleInput{
  AssumeRolePolicyDocument: aws.String(string(policyBytes)),
  RoleName:                 aws.String(roleName),
 })
 if err != nil {
  log.Printf("Couldn't create role %v. Here's why: %v\n", roleName, err)
 } else {
  role = result.Role
 }
 return role, err
}
```

- For API details, see CreateRole in *AWS SDK for Go API Reference*.

Java

SDK for Java 2.x

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import org.json.simple.JSONObject;
import org.json.simple.parser.JSONParser;
import software.amazon.awssdk.services.iam.model.CreateRoleRequest;
import software.amazon.awssdk.services.iam.model.CreateRoleResponse;
import software.amazon.awssdk.services.iam.model.IamException;
import software.amazon.awssdk.regions.Region;
import software.amazon.awssdk.services.iam.IamClient;
import java.io.FileReader;

/*
*   This example requires a trust policy document. For more information, see:
*   https://aws.amazon.com/blogs/security/how-to-use-trust-policies-with-iam-
roles/
*
*
*  In addition, set up your development environment, including your credentials.
*
*  For information, see this documentation topic:
*
*  https://docs.aws.amazon.com/sdk-for-java/latest/developer-guide/get-
started.html
 */

public class CreateRole {
    public static void main(String[] args) throws Exception {
        final String usage = """
                Usage:
                    <rolename> <fileLocation>\s

                Where:
```

```
                    rolename - The name of the role to create.\s
                    fileLocation - The location of the JSON document that
represents the trust policy.\s
               """;

       if (args.length != 2) {
           System.out.println(usage);
           System.exit(1);
       }

       String rolename = args[0];
       String fileLocation = args[1];
       Region region = Region.AWS_GLOBAL;
       IamClient iam = IamClient.builder()
               .region(region)
               .build();

       String result = createIAMRole(iam, rolename, fileLocation);
       System.out.println("Successfully created user: " + result);
       iam.close();
   }

   public static String createIAMRole(IamClient iam, String rolename, String
fileLocation) throws Exception {
       try {
           JSONObject jsonObject = (JSONObject)
readJsonSimpleDemo(fileLocation);
           CreateRoleRequest request = CreateRoleRequest.builder()
                   .roleName(rolename)
                   .assumeRolePolicyDocument(jsonObject.toJSONString())
                   .description("Created using the AWS SDK for Java")
                   .build();

           CreateRoleResponse response = iam.createRole(request);
           System.out.println("The ARN of the role is " +
response.role().arn());

       } catch (IamException e) {
           System.err.println(e.awsErrorDetails().errorMessage());
           System.exit(1);
       }
       return "";
   }
```

```
    public static Object readJsonSimpleDemo(String filename) throws Exception {
        FileReader reader = new FileReader(filename);
        JSONParser jsonParser = new JSONParser();
        return jsonParser.parse(reader);
    }
}
```

- For API details, see CreateRole in *AWS SDK for Java 2.x API Reference*.

JavaScript

SDK for JavaScript (v3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

Create the role.

```
import { CreateRoleCommand, IAMClient } from "@aws-sdk/client-iam";

const client = new IAMClient({});

/**
 *
 * @param {string} roleName
 */
export const createRole = (roleName) => {
  const command = new CreateRoleCommand({
    AssumeRolePolicyDocument: JSON.stringify({
      Version: "2012-10-17",
      Statement: [
        {
          Effect: "Allow",
          Principal: {
            Service: "lambda.amazonaws.com",
          },
          Action: "sts:AssumeRole",
        },
```

```
      ],
    }),
    RoleName: roleName,
  });

  return client.send(command);
};
```

- For API details, see CreateRole in *AWS SDK for JavaScript API Reference*.

PHP

SDK for PHP

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
$uuid = uniqid();
$service = new IAMService();

$assumeRolePolicyDocument = "{
                \"Version\": \"2012-10-17\",
                \"Statement\": [{
                    \"Effect\": \"Allow\",
                    \"Principal\": {\"AWS\": \"{$user['Arn']}\"},
                    \"Action\": \"sts:AssumeRole\"
                }]
            }";
$assumeRoleRole = $service->createRole("iam_demo_role_$uuid",
 $assumeRolePolicyDocument);
echo "Created role: {$assumeRoleRole['RoleName']}\n";

    /**
     * @param string $roleName
     * @param string $rolePolicyDocument
     * @return array
     * @throws AwsException
     */
```

```
    public function createRole(string $roleName, string $rolePolicyDocument)
    {
        $result = $this->customWaiter(function () use ($roleName,
 $rolePolicyDocument) {
            return $this->iamClient->createRole([
                'AssumeRolePolicyDocument' => $rolePolicyDocument,
                'RoleName' => $roleName,
            ]);
        });
        return $result['Role'];
    }
```

- For API details, see CreateRole in *AWS SDK for PHP API Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example creates a new role named `MyNewRole` and attaches to it the policy found in the file `NewRoleTrustPolicy.json`. Note that you must use the `-Raw` switch parameter to successfully process the JSON policy file. The policy document displayed in the output is URL encoded. It is decoded in this example with the `UrlDecode` .NET method.

```
$results = New-IAMRole -AssumeRolePolicyDocument (Get-Content -raw
 NewRoleTrustPolicy.json) -RoleName MyNewRole
$results
```

Output:

```
Arn                      : arn:aws:iam::123456789012:role/MyNewRole
AssumeRolePolicyDocument : %7B%0D%0A%20%20%22Version%22%3A%20%222012-10-17%22%2C
%0D%0A%20%20%22Statement%22
                           %3A%20%5B%0D%0A%20%20%20%20%7B%0D%0A
%20%20%20%20%20%20%22Sid%22%3A%20%22%22%2C
                           %0D%0A%20%20%20%20%20%20%22Effect%22%3A%20%22Allow
%22%2C%0D%0A%20%20%20%20%20%20
                           %22Principal%22%3A%20%7B%0D%0A
%20%20%20%20%20%20%20%20%20%22AWS%22%3A%20%22arn%3Aaws
```

```
                              %3Aiam%3A%3A123456789012%3ADavid%22%0D%0A
%20%20%20%20%20%20%7D%2C%0D%0A%20%20%20
                              %20%20%20%22Action%22%3A%20%22sts%3AAssumeRole%22%0D
%0A%20%20%20%20%7D%0D%0A%20
                              %20%5D%0D%0A%7D
CreateDate                  : 4/15/2015 11:04:23 AM
Path                        : /
RoleId                      : V5PAJI2KPN4EAEXAMPLE1
RoleName                    : MyNewRole

[System.Reflection.Assembly]::LoadWithPartialName("System.Web.HttpUtility")
[System.Web.HttpUtility]::UrlDecode($results.AssumeRolePolicyDocument)
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "",
      "Effect": "Allow",
      "Principal": {
        "AWS": "arn:aws:iam::123456789012:David"
      },
      "Action": "sts:AssumeRole"
    }
  ]
}
```

- For API details, see CreateRole in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
def create_role(role_name, allowed_services):
    """
    Creates a role that lets a list of specified services assume the role.
```

```
    :param role_name: The name of the role.
    :param allowed_services: The services that can assume the role.
    :return: The newly created role.
    """
    trust_policy = {
        "Version": "2012-10-17",
        "Statement": [
            {
                "Effect": "Allow",
                "Principal": {"Service": service},
                "Action": "sts:AssumeRole",
            }
            for service in allowed_services
        ],
    }

    try:
        role = iam.create_role(
            RoleName=role_name, AssumeRolePolicyDocument=json.dumps(trust_policy)
        )
        logger.info("Created role %s.", role.name)
    except ClientError:
        logger.exception("Couldn't create role %s.", role_name)
        raise
    else:
        return role
```

- For API details, see CreateRole in *AWS SDK for Python (Boto3) API Reference*.

Ruby

SDK for Ruby

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
 # Creates a role and attaches policies to it.
 #
 # @param role_name [String] The name of the role.
 # @param assume_role_policy_document [Hash] The trust relationship policy
document.
 # @param policy_arns [Array<String>] The ARNs of the policies to attach.
 # @return [String, nil] The ARN of the new role if successful, or nil if an
error occurred.
 def create_role(role_name, assume_role_policy_document, policy_arns)
   response = @iam_client.create_role(
     role_name: role_name,
     assume_role_policy_document: assume_role_policy_document.to_json
   )
   role_arn = response.role.arn

   policy_arns.each do |policy_arn|
     @iam_client.attach_role_policy(
       role_name: role_name,
       policy_arn: policy_arn
     )
   end

   role_arn
 rescue Aws::IAM::Errors::ServiceError => e
   @logger.error("Error creating role: #{e.message}")
   nil
 end
```

- For API details, see CreateRole in *AWS SDK for Ruby API Reference*.

Rust

SDK for Rust

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
pub async fn create_role(
    client: &iamClient,
    role_name: &str,
    role_policy_document: &str,
) -> Result<Role, iamError> {
    let response: CreateRoleOutput = loop {
        if let Ok(response) = client
            .create_role()
            .role_name(role_name)
            .assume_role_policy_document(role_policy_document)
            .send()
            .await
        {
            break response;
        }
    };

    Ok(response.role.unwrap())
}
```

- For API details, see CreateRole in *AWS SDK for Rust API reference*.

Swift

SDK for Swift

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
import AWSIAM
import AWSS3


    public func createRole(name: String, policyDocument: String) async throws ->
 String {
        let input = CreateRoleInput(
            assumeRolePolicyDocument: policyDocument,
```

```
            roleName: name
        )
        do {
            let output = try await client.createRole(input: input)
            guard let role = output.role else {
                throw ServiceHandlerError.noSuchRole
            }
            guard let id = role.roleId else {
                throw ServiceHandlerError.noSuchRole
            }
            return id
        } catch {
            print("ERROR: createRole:", dump(error))
            throw error
        }
    }
```

- For API details, see CreateRole in *AWS SDK for Swift API reference*.

Starting AWS Config with a customer managed configuration recorder using the AWS CLI

You can start AWS Config by creating a customer managed configuration recorder. To create a customer managed configuration recorder with the AWS CLI, use the following commands: `put-configuration-recorder`, `put-delivery-channel`, and `start-configuration-recorder`.

- The `put-configuration-recorder` command creates a customer managed configuration recorder.
- The `put-delivery-channel` command creates a delivery channel where AWS Config delivers configuration information to an S3 bucket and SNS topic.
- The `start-configuration-recorder` starts the customer managed configuration recorder. The customer managed configuration recorder will begin recording configuration changes for the resource types you specify.

Topics

- Considerations

- Step 1: Run the put-configuration-recorder
- Step 2: Run the put-delivery-channel command
- Step 3: Run the start-configuration-recorder command

Considerations

S3 bucket, SNS topic, and IAM role are required

To create a customer managed configuration recorder, you need to create an S3 bucket, an SNS topic, and an IAM role with attached policies as prerequisites. To set up your prerequisites for AWS Config, see Prerequisites.

One customer managed configuration recorder per account per Region

You can have only one customer managed configuration recorder for each AWS account for each AWS Region.

One delivery channel per account per Region

You can have only one delivery channel region for each AWS account for each AWS Region.

Policies and compliance results

IAM policies and other policies managed in AWS Organizations can impact whether AWS Config has permissions to record configuration changes for your resources. Additionally, rules directly evaluate the configuration of a resource and rules don't take into account these policies when running evaluations. Make sure that the policies in effect align with how you intend to use AWS Config.

Step 1: Run the put-configuration-recorder

Use the `put-configuration-recorder` command to create a customer managed configuration recorder:

This command uses the `--configuration-recorder` and `---recording-group` fields.

```
$ aws configservice put-configuration-recorder \
--configuration-recorder file://configurationRecorder.json \
--recording-group file://recordingGroup.json
```

The `configuration-recorder` field

The `configurationRecorder.json` file specifies `name` and `roleArn` as well as the default recording frequency for the configuration recorder (`recordingMode`). You can also use this field to override the recording frequency for specific resource types.

```
{
  "name": "default",
  "roleARN": "arn:aws:iam::123456789012:role/config-role",
  "recordingMode": {
    "recordingFrequency": CONTINUOUS or DAILY,
    "recordingModeOverrides": [
        {
            "description": "Description you provide for the override",
            "recordingFrequency": CONTINUOUS or DAILY,
            "resourceTypes": [ Comma-separated list of resource types to include in the
 override ]
        }
    ]
  }
}
```

The `recording-group` field

The `recordingGroup.json` file specifies which resource types are recorded.

```
{
    "allSupported": boolean,
    "exclusionByResourceTypes": {
        "resourceTypes": [ Comma-separated list of resource types to exclude ]
    },
    "includeGlobalResourceTypes": boolean,
    "recordingStrategy": {
        "useOnly": "Recording strategy for the configuration recorder"
    },
    "resourceTypes": [ Comma-separated list of resource types to include]
}
```

For more information about these fields, see `put-configuration-recorder` in the *AWS CLI Command Reference*.

Step 2: Run the put-delivery-channel command

Use the `put-delivery-channel` command to create a delivery channel:

This command uses the `--delivery-channel` field.

```
$ aws configservice put-delivery-channel --delivery-channel file://deliveryChannel.json
```

The `delivery-channel` field

The `deliveryChannel.json` file specifies the following:

- The `name` for the delivery channel.
- The `s3BucketName` where AWS Config sends configuration snapshots.
- The `snsTopicARN` where AWS Config sends notifications
- The `configSnapshotDeliveryProperties` which sets how often AWS Config delivers configuration snapshots and how often it invokes evaluations for periodic rules.

```
{
    "name": "default",
    "s3BucketName": "config-bucket-123456789012",
    "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
    "configSnapshotDeliveryProperties": {
        "deliveryFrequency": "Twelve_Hours"
    }
}
```

For more information about these fields, see `put-delivery-channel` in the *AWS CLI Command Reference*.

Step 3: Run the start-configuration-recorder command

Use the `start-configuration-recorder` command to start AWS Config:

```
$ aws configservice start-configuration-recorder --configuration-recorder-
name configRecorderName
```

For more information about these fields, see `start-configuration-recorder` in the *AWS CLI Command Reference*.

Verifying that AWS Config is Successfully Started with the AWS CLI

After you have started AWS Config, you can use AWS CLI commands to check that the AWS Config is running and that AWS Config has created a configuration recorder and a delivery channel. You can also confirm that AWS Config has started recording and delivering configurations to the delivery channel.

Topics

- Step 1: Check that a delivery channel is Created
- Step 2: Check that a configuration recorder is Created
- Step 3: Check that AWS Config has started recording

Step 1: Check that a delivery channel is Created

Use the `describe-delivery-channels` command to check that your Amazon S3 bucket and Amazon SNS topic is configured.

You can use the `--delivery-channel-names` field to specify a list of delivery channel. If a delivery channel is not specified, this command returns the details of all delivery channels associated with the account.

```
$ aws configservice describe-delivery-channels
{
    "DeliveryChannels": [
        {
            "snsTopicARN": "arn:aws:sns:us-west-2:0123456789012:my-config-topic",
            "name": "my-delivery-channel",
            "s3BucketName": "my-config-bucket"
        }
    ]
}
```

Step 2: Check that a configuration recorder is Created

Use the `describe-configuration-recorders` command to check that a configuration recorder is created.

You can use the `arn` and `configuration-recorder-names` fields to specify a list of configuration recorders. If a configuration recorder is not specified, this command returns the details of all configuration recorders associated with the account.

```
$ aws configservice describe-configuration-recorders
{
    "ConfigurationRecorders": [
        {
            "roleARN": "arn:aws:iam::012345678912:role/myConfigRole",
            "name": "default"
        }
    ]
}
```

Step 3: Check that AWS Config has started recording

Use the `describe-configuration-recorder-status` command to check that the configuration recorder is successfully recording the resource types in scope.

You can use the `arn` and `configuration-recorder-names` fields to specify a list of configuration recorders. If a configuration recorder is not specified, this command returns the details of all configuration recorders associated with the account.

```
$ aws configservice describe-configuration-recorder-status
{
    "ConfigurationRecordersStatus": [
        {
            "name": "default",
            "lastStatus": "SUCCESS",
            "lastStopTime": 1414511624.914,
            "lastStartTime": 1414708460.276,
            "recording": true,
            "lastStatusChangeTime": 1414816537.148,
            "lastErrorMessage": "NA",
            "lastErrorCode": "400"
        }
    ]
}
```

The `true` value in the `recording` field confirms that the configuration recorder has started recording configurations. AWS Config records the time in UTC. The output is displayed as a Unix timestamp.

Using AWS Config with an AWS SDK

AWS software development kits (SDKs) are available for many popular programming languages. Each SDK provides an API, code examples, and documentation that make it easier for developers to build applications in their preferred language.

SDK documentation	Code examples
AWS SDK for C++	AWS SDK for C++ code examples
AWS CLI	AWS CLI code examples
AWS SDK for Go	AWS SDK for Go code examples
AWS SDK for Java	AWS SDK for Java code examples
AWS SDK for JavaScript	AWS SDK for JavaScript code examples
AWS SDK for Kotlin	AWS SDK for Kotlin code examples
AWS SDK for .NET	AWS SDK for .NET code examples
AWS SDK for PHP	AWS SDK for PHP code examples
AWS Tools for PowerShell	Tools for PowerShell code examples
AWS SDK for Python (Boto3)	AWS SDK for Python (Boto3) code examples
AWS SDK for Ruby	AWS SDK for Ruby code examples
AWS SDK for Rust	AWS SDK for Rust code examples
AWS SDK for SAP ABAP	AWS SDK for SAP ABAP code examples
AWS SDK for Swift	AWS SDK for Swift code examples

For examples specific to AWS Config, see Code examples for AWS Config using AWS SDKs.

Example availability

Can't find what you need? Request a code example by using the **Provide feedback** link at the bottom of this page.

Working with the configuration recorder

The *configuration recorder* stores the configuration changes to the resource types in scope as configuration items (CIs).

There are two types of configuration recorders.

Type	Description
Customer managed configuration recorder	A configuration recorder that you managed. The resource types in scope are set by you. By default, a customer managed configuration recorder records all supported resources in the AWS Region where AWS Config is running.
Service-linked configuration recorder	A configuration recorder that is linked to a specific AWS service. The resource types in scope are set by the linked service.

Topics

- Considerations for the customer managed configuration recorder
- Considerations for service-linked configuration recorders
- Drift detection for the configuration recorder
- Starting the customer managed configuration recorder
- Stopping the customer managed configuration recorder
- Changing the recording frequency for the customer managed configuration recorder
- Renaming the customer managed configuration recorder
- Viewing your configuration recorders
- Deleting your configuration recorders

Considerations for the customer managed configuration recorder

One customer managed configuration recorder per account per Region

You can have only one customer managed configuration recorder for each AWS account for each AWS Region.

Default is to record all supported resource types, excluding the global IAM resource types

The default for a customer managed configuration recorder is to record all supported resource types, excluding the following global IAM resource types: `AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User` You can specify which resource types you want to include or exclude from recording.

For more information, see Recording AWS Resources with AWS Config.

You are charged service usage fees for using the customer managed configuration recorder

You are charged service usage fees when AWS Config starts recording configurations with the customer managed configuration recorder.

For pricing information, see AWS Config Pricing.

Use AWS Systems Manager to create a customer managed configuration recorder across an organization

You can use AWS Systems Manager Quick Setup to create a customer managed configuration recorder across multiple organizational units (OUs) and AWS Regions using AWS best practices.

For more information, see Create an AWS Config configuration recorder using Quick Setup in the *Systems Manager User Guide*.

> **Important**
>
> **Policies and compliance results**
>
> IAM policies and other policies managed in AWS Organizations can impact whether AWS Config has permissions to record configuration changes for your resources. Additionally, rules directly evaluate the configuration of a resource and rules don't take into account

these policies when running evaluations. Make sure that the policies in effect align with how you intend to use AWS Config.

Stale evaluation results for deleted resources can persist if the configuration recorder is turned off

If the customer managed configuration recorder is turned off, it disables the ability of AWS Config Config to track changes to the configuration of the resources you specified, including their deletions. This means you might see stale evaluation results for resources that are deleted when the customer managed configuration recorder is turned off since AWS Config cannot capture deletion events if recording is not on.

Considerations for service-linked configuration recorders

The AWS Config service-linked role must be used

The AWS Config service-linked role is required for service-linked configuration recorders.

For more information, see Using Service-Linked Roles for AWS Config.

Service-linked configuration recorders are always recording

You cannot stop or start recording for service-linked configuration recorders. To stop recording, you must delete the service-linked configuration recorder.

For more information, see Deleting the Configuration Recorder.

The recording scope determines if you receive configuration items

The recording scope is set by the service that is linked to the configuration recorder and determines whether you receive configuration items (CIs) in the delivery channel. If the recording scope is internal, you will not receive CIs in the delivery channel.

The recording scope determines if you are charged a service fee

The recording scope is set by the service that is linked to the configuration recorder and determines whether the configuration items (CIs) in scope are recorded for free (INTERNAL) or if it impacts the costs of your bill (PAID).

Supported services

Service-linked configuration recorders are supported for the following services:

AWS service	Service principal	Benefits of using with AWS Config	Learn more
Amazon CloudWatch	`observabilityadmin.amazonaws.com`	You can use Amazon CloudWatch Observability Admin to discover and understand the state of telemetry configuration in CloudWatch for your AWS Organization or account.	For more information, see Auditing CloudWatch telemetry configurations in the *CloudWatch User Guide*.

Drift detection for the configuration recorder

The `AWS::Config::ConfigurationRecorder` resource type is a *configuration item* (CI) for the configuration recorder that tracks all changes to the state of configuration recorder. You can use this CI to check if the state of the configuration recorder differs, or has *drifted*, from its previous state.

For example, this CI tracks if there are updates to resource types that you have enabled AWS Config to track, if you have stopped or started the configuration recorder, or if you have deleted or uninstalled the configuration recorder. A drifted configuration recorder indicates that you are not accurately detecting changes to your intended resource types. If your configuration recorder has been drifted, this can result in false negative or false positive compliance results.

The `AWS::Config::ConfigurationRecorder` resource type is a system resource type of AWS Config and recording of this resource type is enabled by default in all supported Regions. Recording for the `AWS::Config::ConfigurationRecorder` resource type comes with no additional charge.

Starting the customer managed configuration recorder

You can use the AWS Config console or the AWS CLI start the customer managed configuration recorder.

To start the customer managed configuration recorder (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.
3. On the **Customer managed recorder** tab, choose **Start recording**. When prompted, choose **Confirm**.

To start the customer managed configuration recorder (CLI)

Use the `start-configuration-recorder` command:

```
$ aws configservice start-configuration-recorder --configuration-recorder-
name configRecorderName
```

Stopping the customer managed configuration recorder

> **Note**
>
> **Service-linked configuration recorders are always recording**
> You cannot stop a service-linked configuration recorder because service-linked configuration recorders are always recording. To stop recording, you must delete the service-linked configuration recorder. For more information, see Deleting the Configuration Recorder.

You can use the AWS Config console or the AWS CLI stop the customer managed configuration recorder.

To stop the customer managed configuration recorder (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.
3. On the **Customer managed recorder** tab, choose **Stop recording**. When prompted, choose **Confirm**.

To stop the customer managed configuration recorder (CLI)

Use the `stop-configuration-recorder` command:

```
$ aws configservice stop-configuration-recorder --configuration-recorder-
name configRecorderName
```

Changing the recording frequency for the customer managed configuration recorder

AWS Config supports continuous recording and daily recording:

- *Continuous recording* allows you to record configuration changes continuously whenever a change occurs.
- *Daily recording* allows you to receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded. For more information see, Recording Frequency.

You can use the AWS Config console or the AWS CLI change the recording frequency.

To change the recording frequency for the customer managed configuration recorder (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.
3. On the **Customer managed recorder** tab, choose **Start recording**.
4. For **Recording method managed recorder**, choose **All resource types with customizable overrides**.
5. For **Default settings**, choose a recording frequency.
6. Choose **Save**.

To change the recording frequency (CLI)

Use the `put-configuration-recorder` command to change the recording frequency for the configuration recorder:

```
$ aws configservice put-configuration-recorder \
--configuration-recorder file://configurationRecorder.json
```

The `configurationRecorder.json` file specifies `name` and `roleArn` as well as the default recording frequency for the configuration recorder (`recordingMode`). You can also use this field override the recording frequency for specific resource types.

```
{
  "name": "default",
  "roleARN": "arn:aws:iam::123456789012:role/config-role",
  "recordingMode": {
    "recordingFrequency": CONTINUOUS or DAILY,
    "recordingModeOverrides": [
        {
            "description": "Description you provide for the override",
            "recordingFrequency": CONTINUOUS or DAILY,
            "resourceTypes": [ Comma-separated list of resource types to include in
 the override ]
        }
    ]
  }
}
```

`put-configuration-recorder` uses the following fields for the `--configuration-recorder` parameter:

- `name` – The name of the configuration recorder. AWS Config automatically assigns the name of "default" when creating the configuration recorder.
- `roleARN` – Amazon Resource Name (ARN) of the IAM role assumed by AWS Config and used by the configuration recorder.
- `recordingMode` – Specifies the default recording frequency that AWS Config uses to record configuration changes. AWS Config supports *Continuous recording* and *Daily recording*. Continuous recording allows you to record configuration changes continuously whenever a change occurs. Daily recording allows you to receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded.
  - `recordingFrequency` – The default recording frequency that AWS Config uses to record configuration changes.

> **Note**
>
> AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

- `recordingModeOverrides` – This field allows you to specify your overrides for the recording mode. It is an array of `recordingModeOverride` objects. Each `recordingModeOverride` object in the `recordingModeOverrides` array consists of three fields:
  - `description` – A description that you provide for the override.
  - `recordingFrequency` – The recording frequency that will be applied to all the resource types specified in the override.
  - `resourceTypes` – A comma-separated list that specifies which resource types AWS Config includes in the override.

> **Note**
>
> **Required and optional fields**
> The `recordingMode` field for `put-configuration-recorder` is optional. By default, the recording frequency for the configuration recorder is set to Continuous recording.

> **Note**
>
> **Limits**
> Daily recording is not supported for the following resource types:
>
> - `AWS::Config::ResourceCompliance`
> - `AWS::Config::ConformancePackCompliance`
> - `AWS::Config::ConfigurationRecorder`

For the **Record all current and future supported resource types** (ALL_SUPPORTED_RESOURCE_TYPES) recording strategy, these resource types will be set to Continuous recording.

Renaming the customer managed configuration recorder

You must use the AWS CLI to rename the customer managed configuration recorder. To change the name of the customer managed configuration recorder, you must delete it and create a new configuration recorder with your specified name.

Renaming the customer managed configuration recorder using the AWS CLI

1. Use the describe-configuration-recorders command to look up the name of your current customer managed configuration recorder:

```
$ aws configservice describe-configuration-recorders
{
    "ConfigurationRecorders": [
        {
            "roleARN": "arn:aws:iam::012345678912:role/myConfigRole",
            "name": "default"
        }
    ]
}
```

2. Use the delete-configuration-recorder command to delete your customer managed current configuration recorder:

```
$ aws configservice delete-configuration-recorder --configuration-recorder-
name default
```

3. Use the put-configuration-recorder command to create a customer managed configuration recorder with the new name:

```
$ aws configservice put-configuration-recorder --configuration-recorder
 name=configRecorderName,roleARN=arn:aws:iam::012345678912:role/myConfigRole
```

4. Use the start-configuration-recorder command to resume recording:

```
$ aws configservice start-configuration-recorder --configuration-recorder-
name configRecorderName
```

Viewing your configuration recorders

You can use the AWS Config console or the AWS CLI view details about your configuration recorders.

To view your configuration recorders (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.
3. For the customer managed configuration recorder, you can view details on the **Customer managed recorder** tab.
4. For service-linked configuration recorders, choose a service-linked configuration recorders on the **Service-linked recorders** tab, and then choose **View**.

To view your configuration recorders (CLI)

Use the `describe-configuration-recorders` command to view details about your configuration recorders:

```
$ aws configservice describe-configuration-recorders
{
    "ConfigurationRecorders": [
        {
            "roleARN": "arn:aws:iam::012345678912:role/myConfigRole",
            "name": "default"
        }
    ]
}
```

Use the `describe-configuration-recorder-status` command to view the current status of your configuration recorders:

```
$ aws configservice describe-configuration-recorder-status
```

```
{
    "ConfigurationRecordersStatus": [
        {
            "name": "default",
            "lastStatus": "SUCCESS",
            "lastStopTime": 1414511624.914,
            "lastStartTime": 1414708460.276,
            "recording": true,
            "lastStatusChangeTime": 1414816537.148,
            "lastErrorMessage": "NA",
            "lastErrorCode": "400"
        }
    ]
}
```

For both of these commands, you can use the `arn` and `configuration-recorder-names` fields to specify a list of configuration recorders. For service-linked configuration recorders, you can use the `service-principal` field to specify a configuration recorder.

If a configuration recorder is not specified, this command returns the details of all configuration recorders associated with the account.

Deleting your configuration recorders

You must use the AWS CLI to delete the customer managed configuration recorder. You can use AWS Config console or the AWS CLI to delete a service-linked configuration recorder.

To delete the customer managed configuration recorder (CLI)

Use the `delete-configuration-recorder` command:

```
$ aws configservice delete-configuration-recorder --configuration-recorder-
name default
```

To delete a service-linked configuration recorder (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.

3. On the **Service-linked recorders** tab, choose a service-linked configuration recorders on the **Service-linked recorders** tab, and then choose **Delete**. When prompted, choose **Delete**.

To delete a service-linked configuration recorder (CLI)

Use the `delete-service-linked-configuration-recorder` command:

This command uses the `--service-principal` field.

```
$ aws configservice delete-service-linked-configuration-recorder --service-principal
 "The service principal of the AWS service for the service-linked configuration
 recorder that you want to delete"
```

Working with the Delivery Channel

As AWS Config continually records the changes that occur to your AWS resources, it sends notifications and updated configuration states through the *delivery channel*. You can manage the delivery channel to control where AWS Config sends configuration updates.

Topics

- Considerations
- Terminology
- Components of a Configuration Item
- Viewing the Delivery Channel
- Updating the Delivery Channel
- Renaming the Delivery Channel
- Delivering Configuration Snapshots to an Amazon S3 Bucket
- Verifying Delivery Status
- Viewing Configuration Snapshots in Amazon S3 bucket
- Example Configuration Snapshot from AWS Config
- Notifications that AWS Config Sends to an Amazon SNS topic

Considerations

One delivery channel per Region per account

You can have only one delivery channel per AWS Region region per AWS account, and the delivery channel is required to use AWS Config.

Oversized configuration item notifications include a brief summary

When AWS Config detects a configuration change for a resource and the notification exceeds the maximum size allowed by Amazon SNS, the notification includes a brief summary of the configuration item. You can view the complete notification in the Amazon S3 bucket location specified in the `s3BucketLocation` field. For more information, see Example Oversized Configuration Item Change Notification.

AWS Config supports AWS KMS encryption for Amazon S3 buckets used by AWS Config

You can provide an AWS Key Management Service (AWS KMS) key or alias Amazon Resource Name (ARN) to encrypt the data delivered to your Amazon Simple Storage Service (Amazon S3) bucket. By default, AWS Config delivers configuration history and snapshot files to your Amazon S3 bucket and encrypts the data at rest using S3 AES-256 server-side encryption, SSE-S3. However, if you provide AWS Config with your KMS key or alias ARN, AWS Config uses that KMS key instead of AES-256 encryption.

AWS Config does not support the delivery channel to an Amazon S3 bucket where object lock is enabled with default retention enabled. For more information, see How S3 Object Lock works.

Terminology

A *configuration item* represents a point-in-time view of the various attributes of a supported AWS resource that exists in your account. The components of a configuration item include metadata, attributes, relationships, current configuration, and related events. AWS Config creates a configuration item whenever it detects a change to a resource type that it is recording. For example, if AWS Config is recording Amazon S3 buckets, AWS Config creates a configuration item whenever a bucket is created, updated, or deleted. You can also select for AWS Config to create a configuration item at the recording frequency that you set.

A *configuration history* is a collection of the configuration items for a given resource over any time period. A configuration history can help you answer questions about, for example, when the resource was first created, how the resource has been configured over the last month, and what configuration changes were introduced yesterday at 9 AM. The configuration history is available to you in multiple formats. AWS Config automatically delivers a configuration history file for each resource type that is being recorded to an Amazon S3 bucket that you specify. You can select a given resource in the AWS Config console and navigate to all previous configuration items for that resource using the timeline. Additionally, you can access the historical configuration items for a resource from the API.

A *configuration snapshot* is a collection of the configuration items for the supported resources that exist in your account. This configuration snapshot is a complete picture of the resources that are being recorded and their configurations. The configuration snapshot can be a useful tool for validating your configuration. For example, you may want to examine the configuration snapshot regularly for resources that are configured incorrectly or that potentially should not exist. The configuration snapshot is available in multiple formats. You can have the configuration snapshot delivered to an Amazon Simple Storage Service (Amazon S3) bucket that you specify. Additionally,

you can select a point in time in the AWS Config console and navigate through the snapshot of configuration items using the relationships between the resources.

A *configuration stream* is an automatically updated list of all configuration items for the resources that AWS Config is recording. Every time a resource is created, modified, or deleted, AWS Config creates a configuration item and adds to the configuration stream. The configuration stream works by using an Amazon Simple Notification Service (Amazon SNS) topic of your choice. The configuration stream is helpful for observing configuration changes as they occur so that you can spot potential problems, generating notifications if certain resources are changed, or updating external systems that need to reflect the configuration of your AWS resources.

Components of a Configuration Item

A *configuration item* represents a point-in-time view of the various attributes of a supported AWS resource that exists in your account. The components of a configuration item include metadata, attributes, relationships, current configuration, and related events. AWS Config creates a configuration item whenever it detects a change to a resource type that it is recording. For example, if AWS Config is recording Amazon S3 buckets, AWS Config creates a configuration item whenever a bucket is created, updated, or deleted. You can also select for AWS Config to create a configuration item at the recording frequency that you set.

A configuration item consists of the following components.

Component	Description	Contains
Metadata	Information about this configuration item	• Version ID • Time when the configuration item was captured • Status of the configuration item indicatin g whether the item was captured successfully • State ID indicating the ordering of the configuration items of a resource
Attributes	Resource attributes	• Resource ID • List of key–value tags for this resource

Component	Description	Contains
		• Resource type (see Supported Resource Types for AWS Config) • Amazon Resource Name (ARN) • Availability Zone that contains this resource, if applicable • Time the resource was created
Relationships	How the resource is related to other resources associated with the account	Description of the relationship, such as Amazon EBS volume `vol-1234567` is attached to an Amazon EC2 instance `i-a1b2c3d4`
Current configuration	Information returned through a call to the Describe or List API of the resource	For example, `DescribeVolumes` API returns the following information about the volume: • Availability Zone the volume is in • Time the volume was attached • ID of the EC2 instance it is attached to • Current status of the volume • State of DeleteOnTermination flag • Device the volume is attached to • Type of volume, such as `gp2`, `io1`, or `standard`

Notes

1. A configuration item relationship does not include network flow or data flow dependencies. Configuration items cannot be customized to represent your application architecture.
2. As of Version 1.3, the relatedEvents field is empty. You can access the LookupEvents API in the *AWS CloudTrail API Reference* to retrieve the events for the resource.
3. As of Version 1.3, the configurationItemMD5Hash field is empty. You can use the configurationStateId field to ensure you have the latest configuration item.

4. If a resource type does not support tagging or does not include tag information in its describe API response, AWS Config won't capture tag data in the configuration items (CIs) for that resource type. AWS Config will still record these resources. However, any functionality that relies on tag data won't work. This affects tag-based filtering, grouping, or compliance evaluation that relies on tag data.

Viewing the Delivery Channel

You must use the AWS CLI to view details about the delivery channel.

The following code examples show how to use `DescribeDeliveryChannels`.

CLI

AWS CLI

To get details about the delivery channel

The following command returns details about the delivery channel:

```
aws configservice describe-delivery-channels
```

Output:

```
{
    "DeliveryChannels": [
        {
            "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
            "name": "default",
            "s3BucketName": "config-bucket-123456789012"
        }
    ]
}
```

- For API details, see DescribeDeliveryChannels in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example retrieves the delivery channel for the region and displays details.

```
Get-CFGDeliveryChannel -Region eu-west-1 | Select-Object Name, S3BucketName,
 S3KeyPrefix,
 @{N="DeliveryFrequency";E={$_.ConfigSnapshotDeliveryProperties.DeliveryFrequency}}
```

Output:

```
Name    S3BucketName               S3KeyPrefix DeliveryFrequency
----    ------------               ----------- -----------------
default config-bucket-NA my          TwentyFour_Hours
```

- For API details, see DescribeDeliveryChannels in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Updating the Delivery Channel

When you update the delivery channel, you can set the following options:

- The Amazon S3 bucket where AWS Config sends configuration snapshots and configuration history files.
- How often AWS Config delivers configuration snapshots to your Amazon S3 bucket.
- The Amazon SNS topic to which AWS Config sends notifications about configuration changes.

To update the delivery channel (Console)

You can use the AWS Config console to set the Amazon S3 bucket and the Amazon SNS topic for your delivery channel. For steps to manage these settings, see Setting Up AWS Config with the Console.

The console does not provide options to rename the delivery channel, set the frequency for configuration snapshots, or delete the delivery channel. To do these tasks, you must use the AWS CLI, the AWS Config API, or one of the AWS SDKs.

To update the delivery channel (AWS SDKs)

The following code examples show how to use `PutDeliveryChannel`.

CLI

AWS CLI

To create a delivery channel

The following command provides the settings for the delivery channel as JSON code:

```
aws configservice put-delivery-channel --delivery-channel file://
deliveryChannel.json
```

The `deliveryChannel.json` file specifies the delivery channel attributes:

```
{
    "name": "default",
    "s3BucketName": "config-bucket-123456789012",
    "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
    "configSnapshotDeliveryProperties": {
        "deliveryFrequency": "Twelve_Hours"
    }
}
```

This example sets the following attributes:

`name` - The name of the delivery channel. By default, AWS Config assigns the name `default` to a new delivery channel.You cannot update the delivery channel name with the `put-delivery-channel` command. For the steps to change the name, see Renaming the Delivery Channel.`s3BucketName` - The name of the Amazon S3 bucket to which AWS Config delivers configuration snapshots and configuration history files.If you specify a bucket that belongs to another AWS account, that bucket must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon S3 Bucket.

`snsTopicARN` - The Amazon Resource Name (ARN) of the Amazon SNS topic to which AWS Config sends notifications about configuration changes.If you choose a topic from another account, the topic must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon SNS Topic.

`configSnapshotDeliveryProperties` - Contains the `deliveryFrequency` attribute, which sets how often AWS Config delivers configuration snapshots and how often it invokes evaluations for periodic Config rules.

If the command succeeds, AWS Config returns no output. To verify the settings of your delivery channel, run the describe-delivery-channels command.

- For API details, see PutDeliveryChannel in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example changes the deliveryFrequency property of an existing delivery channel.

```
Write-CFGDeliveryChannel -ConfigSnapshotDeliveryProperties_DeliveryFrequency
 TwentyFour_Hours -DeliveryChannelName default -DeliveryChannel_S3BucketName
 amzn-s3-demo-bucket -DeliveryChannel_S3KeyPrefix my
```

- For API details, see PutDeliveryChannel in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

(Optional) You can use the `describe-delivery-channels` command to verify that the delivery channel settings are updated:

```
$ aws configservice describe-delivery-channels
{
    "DeliveryChannels": [
        {
            "configSnapshotDeliveryProperties": {
                "deliveryFrequency": "Twelve_Hours"
            },
            "snsTopicARN": "arn:aws:sns:us-east-2:123456789012:config-topic",
            "name": "default",
            "s3BucketName": "config-bucket-123456789012"
        }
    ]
}
```

The following code examples show how to use `DescribeDeliveryChannels`.

CLI

AWS CLI

To get details about the delivery channel

The following command returns details about the delivery channel:

```
aws configservice describe-delivery-channels
```

Output:

```
{
    "DeliveryChannels": [
        {
            "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
            "name": "default",
            "s3BucketName": "config-bucket-123456789012"
        }
    ]
}
```

- For API details, see DescribeDeliveryChannels in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example retrieves the delivery channel for the region and displays details.

```
Get-CFGDeliveryChannel -Region eu-west-1 | Select-Object Name, S3BucketName,
 S3KeyPrefix,
 @{N="DeliveryFrequency";E={$_.ConfigSnapshotDeliveryProperties.DeliveryFrequency}}
```

Output:

```
Name    S3BucketName               S3KeyPrefix DeliveryFrequency
----    ------------               ----------- -----------------
default config-bucket-NA my          TwentyFour_Hours
```

- For API details, see DescribeDeliveryChannels in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Renaming the Delivery Channel

To change the delivery channel name, you must delete it and create a new delivery channel with your specified name. Before you can delete the delivery channel, you must temporarily stop the configuration recorder. The AWS Config console does not provide the option to delete the delivery channel. You must use the AWS CLI, the AWS Config API, or one of the AWS SDKs.

Renaming the delivery channel using the AWS CLI

1. Use the `stop-configuration-recorder` command to stop the configuration recorder:

```
$ aws configservice stop-configuration-recorder --configuration-recorder-
name configRecorderName
```

2. Use the `describe-delivery-channels` command, and take note of your delivery channel's attributes:

```
$ aws configservice describe-delivery-channels
{
    "DeliveryChannels": [
        {
            "configSnapshotDeliveryProperties": {
                "deliveryFrequency": "Twelve_Hours"
            },
            "snsTopicARN": "arn:aws:sns:us-east-2:123456789012:config-topic",
            "name": "default",
            "s3BucketName": "config-bucket-123456789012"
        }
    ]
}
```

3. Use the `delete-delivery-channel` command to delete the delivery channel:

```
$ aws configservice delete-delivery-channel --delivery-channel-name default
```

4. Use the `put-delivery-channel` command to create a delivery channel with the desired name:

```
$ aws configservice put-delivery-channel --delivery-channel file://
deliveryChannel.json
```

The deliveryChannel.json file specifies the delivery channel attributes:

```
{
    "name": "myCustomDeliveryChannelName",
    "s3BucketName": "config-bucket-123456789012",
    "snsTopicARN": "arn:aws:sns:us-east-2:123456789012:config-topic",
    "configSnapshotDeliveryProperties": {
        "deliveryFrequency": "Twelve_Hours"
    }
}
```

5. Use the `start-configuration-recorder` command to resume recording:

```
$ aws configservice start-configuration-recorder --configuration-recorder-
name configRecorderName
```

Delivering Configuration Snapshots to an Amazon S3 Bucket

A *configuration snapshot* is a collection of the configuration items for the supported resources that exist in your account. This configuration snapshot is a complete picture of the resources that are being recorded and their configurations. The configuration snapshot can be a useful tool for validating your configuration. For example, you may want to examine the configuration snapshot regularly for resources that are configured incorrectly or that potentially should not exist. The configuration snapshot is available in multiple formats. You can have the configuration snapshot delivered to an Amazon Simple Storage Service (Amazon S3) bucket that you specify. Additionally, you can select a point in time in the AWS Config console and navigate through the snapshot of configuration items using the relationships between the resources.

Delivering Configuration Snapshots

AWS Config generates configuration snapshots when you invoke the DeliverConfigSnapshot action or you run the AWS CLI `deliver-config-snapshot` command. AWS Config stores configuration snapshots in the Amazon S3 bucket that you specified when you enabled AWS Config.

Enter the `deliver-config-snapshot` command by specifying the name assigned by AWS Config when you configured your delivery channel, for example:

```
$ aws configservice deliver-config-snapshot --delivery-channel-name default
{
    "configSnapshotId": "94ccff53-83be-42d9-996f-b4624b3c1a55"
}
```

Verifying Delivery Status

Enter the `describe-delivery-channel-status` command to verify that the AWS Config has started delivering the configurations to the specified delivery channel:

```
aws configservice describe-delivery-channel-status
```

The response lists the status of all the three delivery formats that AWS Config uses to deliver configurations to your bucket and topic.

```
{
    "DeliveryChannelsStatus": [
        {
            "configStreamDeliveryInfo": {
                "lastStatusChangeTime": 1415138614.125,
                "lastStatus": "SUCCESS"
            },
            "configHistoryDeliveryInfo": {
                "lastSuccessfulTime": 1415148744.267,
                "lastStatus": "SUCCESS",
                "lastAttemptTime": 1415148744.267
            },
            "configSnapshotDeliveryInfo": {
                "lastSuccessfulTime": 1415333113.4159999,
                "lastStatus": "SUCCESS",
                "lastAttemptTime": 1415333113.4159999
            },
            "name": "default"
        }
    ]
}
```

View the `lastSuccessfulTime` field in `configSnapshotDeliveryInfo`. The time should match the time you last requested the delivery of the configuration snapshot.

> **Note**
>
> AWS Config uses the UTC format (Coordinated Universal Time) to record the time.

Viewing Configuration Snapshots in Amazon S3 bucket

A *configuration snapshot* is a collection of the configuration items for the supported resources that exist in your account. This configuration snapshot is a complete picture of the resources that are being recorded and their configurations. The configuration snapshot can be a useful tool for validating your configuration. For example, you may want to examine the configuration snapshot regularly for resources that are configured incorrectly or that potentially should not exist. The configuration snapshot is available in multiple formats. You can have the configuration snapshot delivered to an Amazon Simple Storage Service (Amazon S3) bucket that you specify. Additionally, you can select a point in time in the AWS Config console and navigate through the snapshot of configuration items using the relationships between the resources.

Viewing Configuration Snapshots

1. Sign in to the AWS Management Console and open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. In the Amazon S3 console **All Buckets** list, choose the name of your Amazon S3 bucket.
3. Go through the nested folders in your bucket until you see the `ConfigSnapshot` object with a snapshot ID that matches with the ID returned by the command. Download and open the object to view the configuration snapshot.. The S3 bucket also contains an empty file named `ConfigWritabilityCheckFile`. AWS Config creates this file to verify that the service can successfully write to the S3 bucket.

Example Configuration Snapshot from AWS Config

The following is an example of the information that AWS Config includes in a configuration snapshot. The snapshot describes the configuration for the resources that AWS Config is recording in the current region for your AWS account, and it describes the relationships between these resources.

> **Note**
>
> The configuration snapshot can include references to resources types and resource IDs that are not supported.


```
{
    "fileVersion": "1.0",
    "requestId": "asudf8ow-4e34-4f32-afeb-0ace5bf3trye",
    "configurationItems": [
        {
            "configurationItemVersion": "1.0",
            "resourceId": "vol-ce676ccc",
            "arn": "arn:aws:us-west-2b:123456789012:volume/vol-ce676ccc",
            "accountId": "12345678910",
            "configurationItemCaptureTime": "2014-03-07T23:47:08.918Z",
            "configurationStateID": "3e660fdf-4e34-4f32-afeb-0ace5bf3d63a",
            "configurationItemStatus": "OK",
            "relatedEvents": [
                "06c12a39-eb35-11de-ae07-adb69edbb1e4",
                "c376e30d-71a2-4694-89b7-a5a04ad92281"
            ],
            "availibilityZone": "us-west-2b",
            "resourceType": "AWS::EC2::Volume",
            "resourceCreationTime": "2014-02-27T21:43:53.885Z",
            "tags": {},
            "relationships": [
                {
                    "resourceId": "i-344c463d",
                    "resourceType": "AWS::EC2::Instance",
                    "name": "Attached to Instance"
                }
            ],
            "configuration": {
                "volumeId": "vol-ce676ccc",
                "size": 1,
                "snapshotId": "",
                "availabilityZone": "us-west-2b",
                "state": "in-use",
                "createTime": "2014-02-27T21:43:53.0885+0000",
                "attachments": [
                    {
```

```
                        "volumeId": "vol-ce676ccc",
                        "instanceId": "i-344c463d",
                        "device": "/dev/sdf",
                        "state": "attached",
                        "attachTime": "2014-03-07T23:46:28.0000+0000",
                        "deleteOnTermination": false
                    }
                ],
                "tags": [
                    {
                        "tagName": "environment",
                        "tagValue": "PROD"
                    },
                    {
                        "tagName": "name",
                        "tagValue": "DataVolume1"
                    }
                ],
                "volumeType": "standard"
            }
        },
        {
            "configurationItemVersion": "1.0",
            "resourceId": "i-344c463d",
            "accountId": "12345678910",
            "arn": "arn:aws:ec2:us-west-2b:123456789012:instance/i-344c463d",
            "configurationItemCaptureTime": "2014-03-07T23:47:09.523Z",
            "configurationStateID": "cdb571fa-ce7a-4ec5-8914-0320466a355e",
            "configurationItemStatus": "OK",
            "relatedEvents": [
                "06c12a39-eb35-11de-ae07-adb69edbb1e4",
                "c376e30d-71a2-4694-89b7-a5a04ad92281"
            ],
            "availibilityZone": "us-west-2b",
            "resourceType": "AWS::EC2::Instance",
            "resourceCreationTime": "2014-02-26T22:56:35.000Z",
            "tags": {
                "Name": "integ-test-1",
                "examplename": "examplevalue"
            },
            "relationships": [
                {
                    "resourceId": "vol-ce676ccc",
                    "resourceType": "AWS::EC2::Volume",
```

```
                "name": "Attached Volume"
            },
            {
                "resourceId": "vol-ef0e06ed",
                "resourceType": "AWS::EC2::Volume",
                "name": "Attached Volume",
                "direction": "OUT"
            },
            {
                "resourceId": "subnet-47b4cf2c",
                "resourceType": "AWS::EC2::SUBNET",
                "name": "Is contained in Subnet",
                "direction": "IN"
            }
        ],
        "configuration": {
            "instanceId": "i-344c463d",
            "imageId": "ami-ccf297fc",
            "state": {
                "code": 16,
                "name": "running"
            },
            "privateDnsName": "ip-172-31-21-63.us-west-2.compute.internal",
            "publicDnsName": "ec2-54-218-4-189.us-west-2.compute.amazonaws.com",
            "stateTransitionReason": "",
            "keyName": "configDemo",
            "amiLaunchIndex": 0,
            "productCodes": [],
            "instanceType": "t1.micro",
            "launchTime": "2014-02-26T22:56:35.0000+0000",
            "placement": {
                "availabilityZone": "us-west-2b",
                "groupName": "",
                "tenancy": "default"
            },
            "kernelId": "aki-fc8f11cc",
            "monitoring": {
                "state": "disabled"
            },
            "subnetId": "subnet-47b4cf2c",
            "vpcId": "vpc-41b4cf2a",
            "privateIpAddress": "172.31.21.63",
            "publicIpAddress": "54.218.4.189",
            "architecture": "x86_64",
```

```
                "rootDeviceType": "ebs",
                "rootDeviceName": "/dev/sda1",
                "blockDeviceMappings": [
                    {
                        "deviceName": "/dev/sda1",
                        "ebs": {
                            "volumeId": "vol-ef0e06ed",
                            "status": "attached",
                            "attachTime": "2014-02-26T22:56:38.0000+0000",
                            "deleteOnTermination": true
                        }
                    },
                    {
                        "deviceName": "/dev/sdf",
                        "ebs": {
                            "volumeId": "vol-ce676ccc",
                            "status": "attached",
                            "attachTime": "2014-03-07T23:46:28.0000+0000",
                            "deleteOnTermination": false
                        }
                    }
                ],
                "virtualizationType": "paravirtual",
                "clientToken": "aBCDe123456",
                "tags": [
                    {
                        "key": "Name",
                        "value": "integ-test-1"
                    },
                    {
                        "key": "examplekey",
                        "value": "examplevalue"
                    }
                ],
                "securityGroups": [
                    {
                        "groupName": "launch-wizard-2",
                        "groupId": "sg-892adfec"
                    }
                ],
                "sourceDestCheck": true,
                "hypervisor": "xen",
                "networkInterfaces": [
                    {
```

```
                        "networkInterfaceId": "eni-55c03d22",
                        "subnetId": "subnet-47b4cf2c",
                        "vpcId": "vpc-41b4cf2a",
                        "description": "",
                        "ownerId": "12345678910",
                        "status": "in-use",
                        "privateIpAddress": "172.31.21.63",
                        "privateDnsName": "ip-172-31-21-63.us-west-2.compute.internal",
                        "sourceDestCheck": true,
                        "groups": [
                            {
                                "groupName": "launch-wizard-2",
                                "groupId": "sg-892adfec"
                            }
                        ],
                        "attachment": {
                            "attachmentId": "eni-attach-bf90c489",
                            "deviceIndex": 0,
                            "status": "attached",
                            "attachTime": "2014-02-26T22:56:35.0000+0000",
                            "deleteOnTermination": true
                        },
                        "association": {
                            "publicIp": "54.218.4.189",
                            "publicDnsName": "ec2-54-218-4-189.us-
west-2.compute.amazonaws.com",
                            "ipOwnerId": "amazon"
                        },
                        "privateIpAddresses": [
                            {
                                "privateIpAddress": "172.31.21.63",
                                "privateDnsName": "ip-172-31-21-63.us-
west-2.compute.internal",
                                "primary": true,
                                "association": {
                                    "publicIp": "54.218.4.189",
                                    "publicDnsName": "ec2-54-218-4-189.us-
west-2.compute.amazonaws.com",
                                    "ipOwnerId": "amazon"
                                }
                            }
                        ]
                    }
                ],
```

```
                "ebsOptimized": false
            }
        }
    ]
}
```

The next step is to verify that configuration snapshot was delivered successfully to the delivery channel.

Notifications that AWS Config Sends to an Amazon SNS topic

> **Note**
>
> Before AWS Config can send notifications to an Amazon SNS topic, you must first set up the configuration recorder and the delivery channel. For more information, see Managing the Configuration Recorder and Managing the Delivery Channel.

You can configure AWS Config to stream configuration changes and notifications to an Amazon SNS topic. For example, when a resource is updated, you can get a notification sent to your email, so that you can view the changes. You can also be notified when AWS Config evaluates your custom or managed rules against your resources. For more information, see Logging and Monitoring in AWS Config.

AWS Config sends notifications for the following events:

- Configuration item change for a resource.
- Configuration history for a resource was delivered for your account.
- Configuration snapshot for recorded resources was started and delivered for your account.
- Compliance state of your resources and whether they are compliant with your rules.
- Evaluation started for a rule against your resources.
- AWS Config failed to deliver the notification to your account.

Topics

- Example Configuration Item Change Notifications
- Example Configuration History Delivery Notification

- Example Configuration Snapshot Delivery Started Notification
- Example Configuration Snapshot Delivery Notification
- Example Compliance Change Notification
- Example Rules Evaluation Started Notification
- Example Oversized Configuration Item Change Notification
- Example Delivery Failed Notification

Example Configuration Item Change Notifications

AWS Config uses Amazon SNS to deliver notifications to subscription endpoints. These notifications provide the delivery status for configuration snapshots and configuration histories, and they provide each configuration item that AWS Config creates when the configurations of recorded AWS resources change. AWS Config also sends notifications that show whether your resources are compliant against your rules. If you choose to have notifications sent by email, you can use filters in your email client application based on the subject line and message body of the email.

The following is an example payload of an Amazon SNS notification that is generated when AWS Config detects that the Amazon Elastic Block Store volume `vol-ce676ccc` is attached to the instance with an ID of `i-344c463d`. The notification contains the configuration item change for the resource.

```
{
    "Type": "Notification",
    "MessageId": "8b945cb0-db34-5b72-b032-1724878af488",
    "TopicArn": "arn:aws:sns:us-west-2:123456789012:example",
    "Message": {
        "MessageVersion": "1.0",
        "NotificationCreateTime": "2014-03-18T10:11:00Z",
        "messageType": "ConfigurationItemChangeNotification",
        "configurationItem": [
            {
                "configurationItemVersion": "1.0",
                "configurationItemCaptureTime": "2014-03-07T23:47:08.918Z",
                "arn": "arn:aws:us-west-2b:123456789012:volume/vol-ce676ccc",
                "resourceId": "vol-ce676ccc",
                "awsAccountId": "123456789012",
                "configurationStateID": "3e660fdf-4e34-4f32-afeb-0ace5bf3d63a",
                "configurationItemStatus": "OK",
                "relatedEvents": [],
```

```
                "availabilityZone": "us-west-2b",
                "resourceType": "AWS::EC2::VOLUME",
                "resourceCreationTime": "2014-02-27T21:43:53.885Z",
                "tags": {},
                "relationships": [
                    {
                        "resourceId": "i-344c463d",
                        "resourceType": "AWS::EC2::INSTANCE",
                        "name": "Attached to Instance"
                    }
                ],
                "configuration": {
                    "volumeId": "vol-ce676ccc",
                    "size": 1,
                    "snapshotId": "",
                    "availabilityZone": "us-west-2b",
                    "state": "in-use",
                    "createTime": "2014-02-27T21:43:53.0885+0000",
                    "attachments": [
                        {
                            "volumeId": "vol-ce676ccc",
                            "instanceId": "i-344c463d",
                            "device": "/dev/sdf",
                            "state": "attached",
                            "attachTime": "2014-03-07T23:46:28.0000+0000",
                            "deleteOnTermination": false
                        }
                    ],
                    "tags": [],
                    "volumeType": "standard"
                }
            }
        ],
        "configurationItemDiff": {
            "changeType": "UPDATE",
            "changedProperties": {
                "Configuration.State": {
                    "previousValue": "available",
                    "updatedValue": "in-use",
                    "changeType": "UPDATE"
                },
                "Configuration.Attachments.0": {
                    "updatedValue": {
                        "VolumeId": "vol-ce676ccc",
```

```
                        "InstanceId": "i-344c463d",
                        "Device": "/dev/sdf",
                        "State": "attached",
                        "AttachTime": "FriMar0723: 46: 28UTC2014",
                        "DeleteOnTermination": "false"
                    },
                    "changeType": "CREATE"
                }
            }
        }
    },
    "Timestamp": "2014-03-07T23:47:10.001Z",
    "SignatureVersion": "1",
    "Signature": "LgfJNB5aOk/w3omqsYrv5cUFY8yvIJvO5ZZh46/
KGPApk6HXRTBRlkhjacnxIXJEWsGI9mxvMmoWPLJGYEAR5FF/+/Ro9QTmiTNcEjQ5kB8wGsRWVrk/
whAzT2lVtofc365En2T1Ncd9iSFFXfJchgBmI7EACZ28t
+n2mWFgo57n6eGDvHTedslzC6KxkfWTfXsR6zHXzkB3XuZImktflg3iPKtvBb3Zc9iVbNsBEI4FITFWktSqqomYDjc5h0kg
+qZhMzEbHWpzFlEzvFl55KaZXxDbznBD1ZkqPgno/WufuxszCiMrsmV8pUNUnkU1TA==",
    "SigningCertURL": "https://sns.us-west-2.amazonaws.com/SimpleNotificationService-
e372f8ca30337fdb084e8ac449342c77.pem",
    "UnsubscribeURL": "https://sns.us-west-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-
west-2:123456789012:example:a6859fee-3638-407c-907e-879651c9d143"
}
```


Configuration Items for Resources with Relationships

If a resource is related to other resources, a change to that resource can result in multiple configuration items. The following example shows how AWS Config creates configuration items for resources with relationships.

1. You have an Amazon EC2 instance with an ID of `i-007d374c8912e3e90`, and the instance is associated with an Amazon EC2 security group, `sg-c8b141b4`.
2. You update your EC2 instance to change the security group to another security group, `sg-3f1fef43`.
3. Because the EC2 instance is related to another resource, AWS Config creates multiple configuration items like the following examples:

This notification contains the configuration item change for the EC2 instance when the security group is replaced.

```
{
    "Type": "Notification",
    "MessageId": "faeba85e-ef46-570a-b01c-f8b0faae8d5d",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] AWS::EC2::Instance i-007d374c8912e3e90 Updated
 in Account 123456789012",
    "Message": {
        "configurationItemDiff": {
            "changedProperties": {
                "Configuration.NetworkInterfaces.0": {
                    "previousValue": {
                        "networkInterfaceId": "eni-fde9493f",
                        "subnetId": "subnet-2372be7b",
                        "vpcId": "vpc-14400670",
                        "description": "",
                        "ownerId": "123456789012",
                        "status": "in-use",
                        "macAddress": "0e:36:a2:2d:c5:e0",
                        "privateIpAddress": "172.31.16.84",
                        "privateDnsName": "ip-172-31-16-84.ec2.internal",
                        "sourceDestCheck": true,
                        "groups": [{
                            "groupName": "example-security-group-1",
                            "groupId": "sg-c8b141b4"
                        }],
                        "attachment": {
                            "attachmentId": "eni-attach-85bd89d9",
                            "deviceIndex": 0,
                            "status": "attached",
                            "attachTime": "2017-01-09T19:36:02.000Z",
                            "deleteOnTermination": true
                        },
                        "association": {
                            "publicIp": "54.175.43.43",
                            "publicDnsName":
 "ec2-54-175-43-43.compute-1.amazonaws.com",
                            "ipOwnerId": "amazon"
                        },
                        "privateIpAddresses": [{
                            "privateIpAddress": "172.31.16.84",
                            "privateDnsName": "ip-172-31-16-84.ec2.internal",
                            "primary": true,
                            "association": {
```

```
                                "publicIp": "54.175.43.43",
                                "publicDnsName":
 "ec2-54-175-43-43.compute-1.amazonaws.com",
                                "ipOwnerId": "amazon"
                            }
                        }]
                    },
                    "updatedValue": null,
                    "changeType": "DELETE"
                },
                "Relationships.0": {
                    "previousValue": {
                        "resourceId": "sg-c8b141b4",
                        "resourceName": null,
                        "resourceType": "AWS::EC2::SecurityGroup",
                        "name": "Is associated with SecurityGroup"
                    },
                    "updatedValue": null,
                    "changeType": "DELETE"
                },
                "Configuration.NetworkInterfaces.1": {
                    "previousValue": null,
                    "updatedValue": {
                        "networkInterfaceId": "eni-fde9493f",
                        "subnetId": "subnet-2372be7b",
                        "vpcId": "vpc-14400670",
                        "description": "",
                        "ownerId": "123456789012",
                        "status": "in-use",
                        "macAddress": "0e:36:a2:2d:c5:e0",
                        "privateIpAddress": "172.31.16.84",
                        "privateDnsName": "ip-172-31-16-84.ec2.internal",
                        "sourceDestCheck": true,
                        "groups": [{
                            "groupName": "example-security-group-2",
                            "groupId": "sg-3f1fef43"
                        }],
                        "attachment": {
                            "attachmentId": "eni-attach-85bd89d9",
                            "deviceIndex": 0,
                            "status": "attached",
                            "attachTime": "2017-01-09T19:36:02.000Z",
                            "deleteOnTermination": true
                        },
```

```
                        "association": {
                            "publicIp": "54.175.43.43",
                            "publicDnsName":
 "ec2-54-175-43-43.compute-1.amazonaws.com",
                            "ipOwnerId": "amazon"
                        },
                        "privateIpAddresses": [{
                            "privateIpAddress": "172.31.16.84",
                            "privateDnsName": "ip-172-31-16-84.ec2.internal",
                            "primary": true,
                            "association": {
                                "publicIp": "54.175.43.43",
                                "publicDnsName":
 "ec2-54-175-43-43.compute-1.amazonaws.com",
                                "ipOwnerId": "amazon"
                            }
                        }]
                    },
                    "changeType": "CREATE"
                },
                "Relationships.1": {
                    "previousValue": null,
                    "updatedValue": {
                        "resourceId": "sg-3f1fef43",
                        "resourceName": null,
                        "resourceType": "AWS::EC2::SecurityGroup",
                        "name": "Is associated with SecurityGroup"
                    },
                    "changeType": "CREATE"
                },
                "Configuration.SecurityGroups.1": {
                    "previousValue": null,
                    "updatedValue": {
                        "groupName": "example-security-group-2",
                        "groupId": "sg-3f1fef43"
                    },
                    "changeType": "CREATE"
                },
                "Configuration.SecurityGroups.0": {
                    "previousValue": {
                        "groupName": "example-security-group-1",
                        "groupId": "sg-c8b141b4"
                    },
                    "updatedValue": null,
```

```
                    "changeType": "DELETE"
                }
            },
            "changeType": "UPDATE"
        },
        "configurationItem": {
            "relatedEvents": [],
            "relationships": [
                {
                    "resourceId": "eni-fde9493f",
                    "resourceName": null,
                    "resourceType": "AWS::EC2::NetworkInterface",
                    "name": "Contains NetworkInterface"
                },
                {
                    "resourceId": "sg-3f1fef43",
                    "resourceName": null,
                    "resourceType": "AWS::EC2::SecurityGroup",
                    "name": "Is associated with SecurityGroup"
                },
                {
                    "resourceId": "subnet-2372be7b",
                    "resourceName": null,
                    "resourceType": "AWS::EC2::Subnet",
                    "name": "Is contained in Subnet"
                },
                {
                    "resourceId": "vol-0a2d63a256bce35c5",
                    "resourceName": null,
                    "resourceType": "AWS::EC2::Volume",
                    "name": "Is attached to Volume"
                },
                {
                    "resourceId": "vpc-14400670",
                    "resourceName": null,
                    "resourceType": "AWS::EC2::VPC",
                    "name": "Is contained in Vpc"
                }
            ],
            "configuration": {
                "instanceId": "i-007d374c8912e3e90",
                "imageId": "ami-9be6f38c",
                "state": {
                    "code": 16,
```

```
                    "name": "running"
                },
                "privateDnsName": "ip-172-31-16-84.ec2.internal",
                "publicDnsName": "ec2-54-175-43-43.compute-1.amazonaws.com",
                "stateTransitionReason": "",
                "keyName": "ec2-micro",
                "amiLaunchIndex": 0,
                "productCodes": [],
                "instanceType": "t2.micro",
                "launchTime": "2017-01-09T20:13:28.000Z",
                "placement": {
                    "availabilityZone": "us-east-2c",
                    "groupName": "",
                    "tenancy": "default",
                    "hostId": null,
                    "affinity": null
                },
                "kernelId": null,
                "ramdiskId": null,
                "platform": null,
                "monitoring": {"state": "disabled"},
                "subnetId": "subnet-2372be7b",
                "vpcId": "vpc-14400670",
                "privateIpAddress": "172.31.16.84",
                "publicIpAddress": "54.175.43.43",
                "stateReason": null,
                "architecture": "x86_64",
                "rootDeviceType": "ebs",
                "rootDeviceName": "/dev/xvda",
                "blockDeviceMappings": [{
                    "deviceName": "/dev/xvda",
                    "ebs": {
                        "volumeId": "vol-0a2d63a256bce35c5",
                        "status": "attached",
                        "attachTime": "2017-01-09T19:36:03.000Z",
                        "deleteOnTermination": true
                    }
                }],
                "virtualizationType": "hvm",
                "instanceLifecycle": null,
                "spotInstanceRequestId": null,
                "clientToken": "bIYqA1483990561516",
                "tags": [{
                    "key": "Name",
```

```
                    "value": "value"
                }],
                "securityGroups": [{
                    "groupName": "example-security-group-2",
                    "groupId": "sg-3f1fef43"
                }],
                "sourceDestCheck": true,
                "hypervisor": "xen",
                "networkInterfaces": [{
                    "networkInterfaceId": "eni-fde9493f",
                    "subnetId": "subnet-2372be7b",
                    "vpcId": "vpc-14400670",
                    "description": "",
                    "ownerId": "123456789012",
                    "status": "in-use",
                    "macAddress": "0e:36:a2:2d:c5:e0",
                    "privateIpAddress": "172.31.16.84",
                    "privateDnsName": "ip-172-31-16-84.ec2.internal",
                    "sourceDestCheck": true,
                    "groups": [{
                        "groupName": "example-security-group-2",
                        "groupId": "sg-3f1fef43"
                    }],
                    "attachment": {
                        "attachmentId": "eni-attach-85bd89d9",
                        "deviceIndex": 0,
                        "status": "attached",
                        "attachTime": "2017-01-09T19:36:02.000Z",
                        "deleteOnTermination": true
                    },
                    "association": {
                        "publicIp": "54.175.43.43",
                        "publicDnsName": "ec2-54-175-43-43.compute-1.amazonaws.com",
                        "ipOwnerId": "amazon"
                    },
                    "privateIpAddresses": [{
                        "privateIpAddress": "172.31.16.84",
                        "privateDnsName": "ip-172-31-16-84.ec2.internal",
                        "primary": true,
                        "association": {
                            "publicIp": "54.175.43.43",
                            "publicDnsName":
 "ec2-54-175-43-43.compute-1.amazonaws.com",
                            "ipOwnerId": "amazon"
```

```
                        }
                    }]
                }],
                "iamInstanceProfile": null,
                "ebsOptimized": false,
                "sriovNetSupport": null,
                "enaSupport": true
            },
            "supplementaryConfiguration": {},
            "tags": {"Name": "value"},
            "configurationItemVersion": "1.2",
            "configurationItemCaptureTime": "2017-01-09T22:50:14.328Z",
            "configurationStateId": 1484002214328,
            "awsAccountId": "123456789012",
            "configurationItemStatus": "OK",
            "resourceType": "AWS::EC2::Instance",
            "resourceId": "i-007d374c8912e3e90",
            "resourceName": null,
            "ARN": "arn:aws:ec2:us-east-2:123456789012:instance/i-007d374c8912e3e90",
            "awsRegion": "us-east-2",
            "availabilityZone": "us-east-2c",
            "configurationStateMd5Hash": "8d0f41750f5965e0071ae9be063ba306",
            "resourceCreationTime": "2017-01-09T20:13:28.000Z"
        },
        "notificationCreationTime": "2017-01-09T22:50:15.928Z",
        "messageType": "ConfigurationItemChangeNotification",
        "recordVersion": "1.2"
    },
    "Timestamp": "2017-01-09T22:50:16.358Z",
    "SignatureVersion": "1",
    "Signature": "lpJTEYOSr8fUbiaaRNw1ECawJFVoD7I67mIeEkfAWJkqvvpak1ULHLlC
+I0sS/01A4P1Yci8GSK/cOEC/O2XBntlw4CAtbMUgTQvb345Z2YZwcpK0kPNi6v6N51DuZ/6DZA8EC
+gVTNTO09xtNIH8aMlvqyvUSXuh278xayExC5yTRXEg+ikdZRd4QzS7obSK1kgRZWI6ipxPNL6rd56/
VvPxyhcbS7Vm40/2+e0nVb3bjNHBxjQTXSs1Xhuc9eP2gEsC4Sl32bGqdeDU1Y4dFGukuzPYoHuEtDPh
+GkLUq3KeiDAQshxAZLmOIRcQ7iJ/bELDJTN9AcX6lqlDZ79w==",
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```

This notification contains the configuration item change for the EC2 security group, `sg-3f1fef43`, which is associated with the instance.


```
{
    "Type": "Notification",
    "MessageId": "564d873e-711e-51a3-b48c-d7d064f65bf4",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] AWS::EC2::SecurityGroup sg-3f1fef43 Created in
 Account 123456789012",
    "Message": {
        "configurationItemDiff": {
            "changedProperties": {},
            "changeType": "CREATE"
        },
        "configurationItem": {
            "relatedEvents": [],
            "relationships": [{
                "resourceId": "vpc-14400670",
                "resourceName": null,
                "resourceType": "AWS::EC2::VPC",
                "name": "Is contained in Vpc"
            }],
            "configuration": {
                "ownerId": "123456789012",
                "groupName": "example-security-group-2",
                "groupId": "sg-3f1fef43",
                "description": "This is an example security group.",
                "ipPermissions": [],
                "ipPermissionsEgress": [{
                    "ipProtocol": "-1",
                    "fromPort": null,
                    "toPort": null,
                    "userIdGroupPairs": [],
                    "ipRanges": ["0.0.0.0/0"],
                    "prefixListIds": []
                }],
                "vpcId": "vpc-14400670",
                "tags": []
            },
            "supplementaryConfiguration": {},
            "tags": {},
            "configurationItemVersion": "1.2",
            "configurationItemCaptureTime": "2017-01-09T22:50:15.156Z",
```

```
            "configurationStateId": 1484002215156,
            "awsAccountId": "123456789012",
            "configurationItemStatus": "ResourceDiscovered",
            "resourceType": "AWS::EC2::SecurityGroup",
            "resourceId": "sg-3f1fef43",
            "resourceName": null,
            "ARN": "arn:aws:ec2:us-east-2:123456789012:security-group/sg-3f1fef43",
            "awsRegion": "us-east-2",
            "availabilityZone": "Not Applicable",
            "configurationStateMd5Hash": "7399608745296f67f7fe1c9ca56d5205",
            "resourceCreationTime": null
        },
        "notificationCreationTime": "2017-01-09T22:50:16.021Z",
        "messageType": "ConfigurationItemChangeNotification",
        "recordVersion": "1.2"
    },
    "Timestamp": "2017-01-09T22:50:16.413Z",
    "SignatureVersion": "1",
    "Signature": "GocX31Uu/zNFo85hZqzsNy30skwmLnjPjj+UjaJzkih
+dCP6gXYGQ0bK7uMzaLL2C/ibYOOsT7I/XY4NW6Amc5T46ydyHDjFRtQi8UfUQTqLXYRTnpOO/
hyK9lMFfhUNs4NwQpmx3n3mYEMpLuMs8DCgeBmB3AQ+hXPhNuNuR3mJVgo25S8AqphN9O0okZ2MKNUQy8iJm/
CVAx70TdnYsfUMZ24n88bUzAfiHGzc8QTthMdrFVUwXxa1h/7Zl8+A7BwoGmjo7W8CfLDVwaIQv1Uplgk3qd95Z0AXOzXVx
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```


Understanding the `configurationItemDiff` field in Amazon SNS `ConfigurationItemChangeNotification` notifications

AWS Config creates a configuration item whenever the configuration of a resource changes (create/update/delete). For a list of supported resource types that AWS Config can record, see Supported Resource Types for AWS Config. AWS Config uses Amazon SNS to deliver a notification as the changes occur. The Amazon SNS notification payload includes fields to help you track the resource changes in a given AWS Region.

To understand why you receive a `ConfigurationItemChangeNotification` notification, review the `configurationItemDiff` details. The fields vary depending on the change type and can form different combinations such as UPDATE-UPDATE, UPDATE-CREATE, and DELETE-DELETE. The following are explanations of some common combinations.

UPDATE-CREATE and UPDATE-UPDATE

The following example includes changes in the resource direct relationships and resource configurations. The `configurationItemDiff` details reveal the following information:

Action performed: A managed policy present in the account was attached to an AWS Identity and Access Management (IAM) role.

Basic operation performed: UPDATE (updating the number of associations of the resource type `AWS::IAM::Policy` in an account).

Change type combinations:

1. Resource direct relationship change UPDATE-CREATE. A new attachment or association was created between an IAM policy and an IAM role.
2. Resource configuration change UPDATE-UPDATE. The number IAM policy associations increased from 2 to 3 when the policy was attached to the IAM role.

Example UPDATE-CREATE and UPDATE-UPDATE `configurationItemDiff` notification:

```
{
    "configurationItemDiff": {
        "changedProperties": {
            "Relationships.0": {
                "previousValue": null,
                "updatedValue": {
                    "resourceId": "AROA6D3M4S53*********",
                    "resourceName": "Test1",
                    "resourceType": "AWS::IAM::Role",
                    "name": "Is attached to Role"
                },
                "changeType": "CREATE"                >>>>>>>>>>>>>>>>>>>> 1
            },
            "Configuration.AttachmentCount": {
                "previousValue": 2,
                "updatedValue": 3,
                "changeType": "UPDATE"                >>>>>>>>>>>>>>>>>>>> 2
            }
        },
        "changeType": "UPDATE"
    }
```

```
}
```

UPDATE-DELETE

The following example includes changes in the resource direct relationships and resource configurations. The `configurationItemDiff` details reveal the following information:

Action performed: A managed policy present in the account was detached from an IAM user.

Basic operation performed: UPDATE (updating the permissions policy associated with the resource type `AWS::IAM::User`).

Change type combinations: Resource direct relationship change UPDATE-DELETE. The association between an IAM user and an IAM policy in an account was deleted.

Example UPDATE-DELETE `configurationItemDiff` notification:

```
{
  "configurationItemDiff": {
    "changedProperties": {
      "Configuration.UserPolicyList.0": {
        "previousValue": {
          "policyName": "Test2",
          "policyDocument": "{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "VisualEditor0",
            "Effect": "Allow",
            "Action": "ec2:RunInstances",
            "Resource": "arn:aws:ec2:*:*:instance/*",
            "Condition": {
                "StringLike": {
                    "aws:RequestTag/VPCId": "*"
                }
            }
        }
    ]
}"
        },
        "updatedValue": null,
        "changeType": "DELETE"                        >>>>>>>>>>>>>>>>>>>> 3
      }
```

```
    },
    "changeType": "UPDATE"
  }
}
```

DELETE-DELETE

The following example includes changes in the resource direct relationships and resource configurations. The `configurationItemDiff` details reveal the following information:

Action performed: An IAM role present in an account was deleted.

Basic operation performed: DELETE (a resource of the resource type `AWS::IAM::Role` was deleted).

Change type combinations: Resource direct relationship change and resource configuration change DELETE-DELETE. The deletion of the IAM role also deleted the association of the IAM policy with the IAM role.

Example DELETE-DELETE `configurationItemDiff` notification:

```
{
  "configurationItemDiff": {
    "changedProperties": {
      "Relationships.0": {
        "previousValue": {
          "resourceId": "ANPAIJ5MXUKK*********",
          "resourceName": "AWSCloudTrailAccessPolicy",
          "resourceType": "AWS::IAM::Policy",
          "name": "Is attached to CustomerManagedPolicy"
        },
        "updatedValue": null,
        "changeType": "DELETE"
      },
      "Configuration": {
        "previousValue": {
          "path": "/",
          "roleName": "CloudTrailRole",
          "roleId": "AROAJITJ6YGM*********",
          "arn": "arn:aws:iam::123456789012:role/CloudTrailRole",
          "createDate": "2017-12-06T10:27:51.000Z",
          "assumeRolePolicyDocument": "{"Version":"2012-10-17","Statement":
[{"Sid":"","Effect":"Allow","Principal":
```

```
{"AWS":"arn:aws:iam::123456789012:root"},"Action":"sts:AssumeRole","Condition":
{"StringEquals":{"sts:ExternalId":"123456"}}}]}",
          "instanceProfileList": [],
          "rolePolicyList": [],
          "attachedManagedPolicies": [
            {
              "policyName": "AWSCloudTrailAccessPolicy",
              "policyArn": "arn:aws:iam::123456789012:policy/AWSCloudTrailAccessPolicy"
            }
          ],
          "permissionsBoundary": null,
          "tags": [],
          "roleLastUsed": null
        },
        "updatedValue": null,
        "changeType": "DELETE"
      }
    },
    "changeType": "DELETE"
}
```

Example Configuration History Delivery Notification

The configuration history is a collection of the configuration items for a resource type over a time period. The following is an example notification that AWS Config sends when the configuration history for a CloudTrail trail resource is delivered for your account.

```
{
    "Type": "Notification",
    "MessageId": "ce49bf2c-d03a-51b0-8b6a-ef480a8b39fe",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] Configuration History Delivery Completed for
 Account 123456789012",
    "Message": {
        "s3ObjectKey": "AWSLogs/123456789012/Config/us-east-2/2016/9/27/
ConfigHistory/123456789012_Config_us-
east-2_ConfigHistory_AWS::CloudTrail::Trail_20160927T195818Z_20160927T195818Z_1.json.gz",
        "s3Bucket": "config-bucket-123456789012-ohio",
        "notificationCreationTime": "2016-09-27T20:37:05.217Z",
        "messageType": "ConfigurationHistoryDeliveryCompleted",
        "recordVersion": "1.1"
    },
    "Timestamp": "2016-09-27T20:37:05.315Z",
```

```
    "SignatureVersion": "1",
    "Signature": "OuIcS5RAKXTR6chQEJp3if4KJQVlBz2kmXh7QE1/
RJQiCPsCNfG0J0rUZ1rqfKMqpps/Ka+zF0kg4dUCWV9PF0dliuwnjfbtYmDZpP4EBOoGmxcTliUn1AIe/
yeGFDuc6P3EotP3zt02rhmxjezjf3c11urstFZ8rTLVXp0z0xeyk4da0UetLsWZxUFEG0Z5uhk09mBo5dg/4mryIOovidhr
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```


Example Configuration Snapshot Delivery Started Notification

The following is an example notification that AWS Config sends when AWS Config starts delivering the configuration snapshot for your account.


```
{
    "Type": "Notification",
    "MessageId": "a32d0487-94b1-53f6-b4e6-5407c9c00be6",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] Configuration Snapshot Delivery Started for
 Account 123456789012",
    "Message": {
        "configSnapshotId": "108e0794-84a7-4cca-a179-76a199ddd11a",
        "notificationCreationTime": "2016-10-18T17:26:09.572Z",
        "messageType": "ConfigurationSnapshotDeliveryStarted",
        "recordVersion": "1.1"
    },
    "Timestamp": "2016-10-18T17:26:09.840Z",
    "SignatureVersion": "1",
    "Signature": "BBA0DeKsfteTpYyZH5HPANpOLmW/jumOMBsghRq/kimY9tjNlkF/
V3BpLG1HVmDQdQzBh6oKE0h0rxcazbyGf5KF5W5r1zKKlEnS9xugFzALPUx//
olSJ4neWalLBKNIq1xvAQgu9qHfDR7dS2aCwe4scQfqOjn1Ev7PlZqxmT+ux3SR/
C54cbfcduDpDsPwdo868+TpZvMtaU30ySnX04fmOgxoiA8AJO/EnjduQ08/zd4SYXhm
+H9wavcwXB9XECelHhRW70Y+wHQixfx40S1SaSRzvnJE+m9mHphFQs64YraRDRv6tMaenTk6CVPO
+81ceAXIg2E1m7hZ7lz4PA==",
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```

Example Configuration Snapshot Delivery Notification

The configuration snapshot is a collection of configuration items for all recorded resources and their configurations in your account. The following is an example notification that AWS Config sends when the configuration snapshot is delivered for your account.


```
{
    "Type": "Notification",
    "MessageId": "9fc82f4b-397e-5b69-8f55-7f2f86527100",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] Configuration Snapshot Delivery Completed for
 Account 123456789012",
    "Message": {
        "configSnapshotId": "16da64e4-cb65-4846-b061-e6c3ba43cb96",
        "s3ObjectKey": "AWSLogs/123456789012/Config/us-east-2/2016/9/27/
ConfigSnapshot/123456789012_Config_us-east-2_ConfigSnapshot_20160927T183939Z_16da64e4-
cb65-4846-b061-e6c3ba43cb96.json.gz",
        "s3Bucket": "config-bucket-123456789012-ohio",
        "notificationCreationTime": "2016-09-27T18:39:39.853Z",
        "messageType": "ConfigurationSnapshotDeliveryCompleted",
        "recordVersion": "1.1"
    },
    "Timestamp": "2016-09-27T18:39:40.062Z",
    "SignatureVersion": "1",
    "Signature": "PMkWfUuj/fKIEXA7s2wTDLbZoF/MDsUkPspYghOpwu9n6m+C
+zrm0cEZXPxxJPvhnWozG7SVqkHYf9QgI/diW2twP/HPDn5GQs2rNDc+YlaByEXnKVtHV1Gd4r1kN57E/
oOW5NVLNczk5ymxAW+WGdptZJkCgyVuhJ28s08m3Z3Kqz96PPSnXzYZoCfCn/
yP6CqXoN7olr4YCbYxYwn8zOUYcPmc45yYNSUTKZi+RJQRnDJkL2qb
+s4h9w2fjbBBj8xe830VbFJqbHp7UkSfpc64Y+tRvmMLY5CI1cYrnuPRhTLdUk+R0sshg5G+JMtSLVG/
TvWbjz44CKXJprjIQg==",
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```


Example Compliance Change Notification

When AWS Config evaluates your resources against a custom or managed rule, AWS Config sends a notification that shows whether the resources are compliant against the rule.

The following is an example notification where the CloudTrail trail resource is compliant against the `cloudtrail-enabled` managed rule.


```
{
    "Type": "Notification",
    "MessageId": "11fd05dd-47e1-5523-bc01-55b988bb9478",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] AWS::::Account 123456789012 is COMPLIANT with
 cloudtrail-enabled in Accoun...",
    "Message": {
        "awsAccountId": "123456789012",
        "configRuleName": "cloudtrail-enabled",
        "configRuleARN": "arn:aws:config:us-east-2:123456789012:config-rule/config-
rule-9rpvxc",
        "resourceType": "AWS::::Account",
        "resourceId": "123456789012",
        "awsRegion": "us-east-2",
        "newEvaluationResult": {
            "evaluationResultIdentifier": {
                "evaluationResultQualifier": {
                    "configRuleName": "cloudtrail-enabled",
                    "resourceType": "AWS::::Account",
                    "resourceId": "123456789012"
                },
                "orderingTimestamp": "2016-09-27T19:48:40.619Z"
            },
            "complianceType": "COMPLIANT",
            "resultRecordedTime": "2016-09-27T19:48:41.405Z",
            "configRuleInvokedTime": "2016-09-27T19:48:40.914Z",
            "annotation": null,
            "resultToken": null
        },
        "oldEvaluationResult": {
            "evaluationResultIdentifier": {
                "evaluationResultQualifier": {
                    "configRuleName": "cloudtrail-enabled",
                    "resourceType": "AWS::::Account",
                    "resourceId": "123456789012"
                },
                "orderingTimestamp": "2016-09-27T16:30:49.531Z"
            },
            "complianceType": "NON_COMPLIANT",
            "resultRecordedTime": "2016-09-27T16:30:50.717Z",
```

```
            "configRuleInvokedTime": "2016-09-27T16:30:50.105Z",
            "annotation": null,
            "resultToken": null
        },
        "notificationCreationTime": "2016-09-27T19:48:42.620Z",
        "messageType": "ComplianceChangeNotification",
        "recordVersion": "1.0"
    },
    "Timestamp": "2016-09-27T19:48:42.749Z",
    "SignatureVersion": "1",
    "Signature": "XZ9FfLb2ywkW9yj0yBkNtIP5q7Cry6JtCEyUiHmG9gpOZi3seQ41udhtAqCZoiNiizAEi
+6gcttHCRV1hNemzp/
YmBmTfO6azYXt0FJDaEvd86k68VCS9aqRlBBjYlNo7ILi4Pqd5rE4BX2YBQSzcQyERGkUfTZ2BIFyAmb1Q/
y4/6ez8rDyi545FDSlgcGEb4LKLNR6eDi4FbKtMGZHA7Nz8obqs1dHbgWYnp3c80mVLl7ohP4hilcxdywAgXrbsN32ekYr1
+BIZ21ZtkcUtY5B3ImgRlUO7Yhn3L3c6rZxQ==",
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```


Example: Config Configuration Item Change | Amazon EventBridge


```
{
  "version": "0",
  "id": "00bdf13e-1111-b2f5-cef0-e9cbbe7cd533",
  "detail-type": "Config Configuration Item Change",
  "source": "aws.config",
  "account": "123456789012",
  "time": "2022-03-16T01:10:51Z",
  "region": "us-east-1",
  "resources": ["arn:aws:elasticfilesystem:us-east-1:123456789012:file-system/
fs-01f0d526165b57f95"],
  "detail": {
    "recordVersion": "1.3",
    "messageType": "ConfigurationItemChangeNotification",
    "configurationItemDiff": {
      "changedProperties": {
        "Configuration.FileSystemTags.0": {
          "updatedValue": {
            "Key": "test",
            "Value": "me"
```

```
          },
          "changeType": "CREATE"
        },
        "Tags.2": {
          "updatedValue": "me",
          "changeType": "CREATE"
        }
      },
      "changeType": "UPDATE"
    },
    "notificationCreationTime": "2022-03-16T01:10:51.976Z",
    "configurationItem": {
      "relatedEvents": [],
      "relationships": [],
      "configuration": {
        "FileSystemId": "fs-01f0d526165b57f95",
        "Arn": "arn:aws:elasticfilesystem:us-east-1:123456789012:file-system/
fs-01f0d526165b57f95",
        "Encrypted": true,
        "FileSystemTags": [{
          "Key": "Name",
          "Value": "myname"
        }, {
          "Key": "test",
          "Value": "me"
        }],
        "PerformanceMode": "generalPurpose",
        "ThroughputMode": "bursting",
        "LifecyclePolicies": [{
          "TransitionToIA": "AFTER_30_DAYS"
        }, {
          "TransitionToPrimaryStorageClass": "AFTER_1_ACCESS"
        }],
        "BackupPolicy": {
          "Status": "ENABLED"
        },
        "FileSystemPolicy": {},
        "KmsKeyId": "arn:aws:kms:us-east-1:123456789012:key/0e6c91d5-e23b-4ed3-
bd36-1561fbbc0a2d"
      },
      "supplementaryConfiguration": {},
      "tags": {
        "aws:elasticfilesystem:default-backup": "enabled",
        "test": "me",
```

```
        "Name": "cloudcontroltest1"
      },
      "configurationItemVersion": "1.3",
      "configurationItemCaptureTime": "2022-03-16T01:10:50.837Z",
      "configurationStateId": 1647393050837,
      "awsAccountId": "123456789012",
      "configurationItemStatus": "OK",
      "resourceType": "AWS::EFS::FileSystem",
      "resourceId": "fs-01f0d526165b57f95",
      "resourceName": "fs-01f0d526165b57f95",
      "ARN": "arn:aws:elasticfilesystem:us-east-1:123456789012:file-system/
fs-01f0d526165b57f95",
      "awsRegion": "us-east-1",
      "availabilityZone": "Regional",
      "configurationStateMd5Hash": ""
    }
  }
}
```

Example Rules Evaluation Started Notification

AWS Config sends a notification when it starts to evaluate your custom or managed rule against your resources. The following is an example notification when AWS Config starts to evaluate the `iam-password-policy` managed rule.

```
{
    "Type": "Notification",
    "MessageId": "358c8e65-e27a-594e-82d0-de1fe77393d7",
    "TopicArn": "arn:aws:sns:us-east-2:123456789012:config-topic-ohio",
    "Subject": "[AWS Config:us-east-2] Config Rules Evaluation Started for Account
 123456789012",
    "Message": {
        "awsAccountId": "123456789012",
        "awsRegion": "us-east-2",
        "configRuleNames": ["iam-password-policy"],
        "notificationCreationTime": "2016-10-13T21:55:21.339Z",
        "messageType": "ConfigRulesEvaluationStarted",
        "recordVersion": "1.0"
    },
    "Timestamp": "2016-10-13T21:55:21.575Z",
    "SignatureVersion": "1",
    "Signature": "DE431D+24zzFRboyPY2bPTsznJWe8L6TjDC+ItYlLFkE9jACSBl3sQ1uSjYzEhEbN7Cs
+wBoHnJ/DxOSpyCxt4giqgKd+H2I636BvrQwHDhJwJm7qI6P8IozEliRvRWbM38zDTvHqkmmXQbdDHRsK/
```

```
MssMeVTBKuW0x8ivMrj+KpwuF57tE62eXeFhjBeJ0DKQV+aC+i3onsuT7HQvXQDBPdOM
+cSuLrJaMQJ6TcMU5G76qg/
gl494ilb4Vj4udboGWpHSgUvI3guFsc1SsTrlWXQKXabWtsCQPfdOhkKgmViCfMZrLRp8Pjnu
+uspYQELkEfwBchDVVzd15iMrAzQ==",
    "SigningCertURL": "https://sns.us-east-2.amazonaws.com/SimpleNotificationService-
b95095beb82e8f6a046b3aafc7f4149a.pem",
    "UnsubscribeURL": "https://sns.us-east-2.amazonaws.com/?
Action=Unsubscribe&SubscriptionArn=arn:aws:sns:us-east-2:123456789012:config-topic-
ohio:956fe658-0ce3-4fb3-b409-a45f22a3c3d4"
}
```

Example Oversized Configuration Item Change Notification

When AWS Config detects a configuration change for a resource, it sends a configuration item (CI) notification. If the notification exceeds the maximum size allowed by Amazon Simple Notification Service (Amazon SNS), the notification includes a brief summary of the configuration item.

You can view the complete notification in the Amazon S3 bucket location specified in the `s3BucketLocation` field.

The following example notification shows a CI for an Amazon EC2 instance. The notification includes a summary of the changes and the location of the notification in the Amazon S3 bucket.

```
View the Timeline for this Resource in the Console:
    https://console.aws.amazon.com/config/home?region=us-west-2#/timeline/
AWS::EC2::Instance/resourceId_14b76876-7969-4097-ab8e-a31942b02e80?
time=2016-10-06T16:46:16.261Z

    The full configuration item change notification for this resource exceeded the
 maximum size allowed by Amazon Simple Notification Service (SNS). A summary of the
 configuration item is provided here. You can view the complete notification in the
 specified Amazon S3 bucket location.

    New State Record Summary:
    ----------------------------
    {
      "configurationItemSummary": {
        "changeType": "UPDATE",
        "configurationItemVersion": "1.2",
        "configurationItemCaptureTime": "2016-10-06T16:46:16.261Z",
        "configurationStateId": 0,
        "awsAccountId": "123456789012",
        "configurationItemStatus": "OK",
```

```
        "resourceType": "AWS::EC2::Instance",
        "resourceId": "resourceId_14b76876-7969-4097-ab8e-a31942b02e80",
        "resourceName": null,
        "ARN": "arn:aws:ec2:us-west-2:123456789012:instance/
resourceId_14b76876-7969-4097-ab8e-a31942b02e80",
        "awsRegion": "us-west-2",
        "availabilityZone": null,
        "configurationStateMd5Hash": "8f1ee69b287895a0f8bc5753eca68e96",
        "resourceCreationTime": "2016-10-06T16:46:10.489Z"
      },
      "s3DeliverySummary": {
        "s3BucketLocation": "amzn-s3-demo-bucket/AWSLogs/123456789012/
Config/us-west-2/2016/10/6/OversizedChangeNotification/AWS::EC2::Instance/
resourceId_14b76876-7969-4097-ab8e-a31942b02e80/123456789012_Config_us-
west-2_ChangeNotification_AWS::EC2::Instance_resourceId_14b76876-7969-4097-ab8e-
a31942b02e80_20161006T164616Z_0.json.gz",
        "errorCode": null,
        "errorMessage": null
      },
      "notificationCreationTime": "2016-10-06T16:46:16.261Z",
      "messageType": "OversizedConfigurationItemChangeNotification",
      "recordVersion": "1.0"
    }
```

How to access oversized configuration items

When a configuration item is oversized, only a summary is sent to Amazon SNS. The complete configuration item (CI) is stored in Amazon S3

The following code example shows how to access the the complete CI.

```
import boto3
import json

def handle_oversized_configuration_item(event):
    """
    Example of handling an oversized configuration item notification

    When a configuration item is oversized:
    1. AWS Config sends a summary notification through SNS
    2. The complete configuration item is stored in S3
    3. Use get_resource_config_history API to retrieve the complete configuration
    """
```

```
    # Extract information from the summary notification
    if event['messageType'] == 'OversizedConfigurationItemChangeNotification':
        summary = event['configurationItemSummary']
        resource_type = summary['resourceType']
        resource_id = summary['resourceId']

        # Initialize AWS Config client
        config_client = boto3.client('config')

        # Retrieve the complete configuration item
        response = config_client.get_resource_config_history(
            resourceType=resource_type,
            resourceId=resource_id
        )

        if response['configurationItems']:
            config_item = response['configurationItems'][0]

            # For EC2 instances, the configuration contains instance details
            configuration = json.loads(config_item['configuration'])
            print(f"Instance Configuration: {configuration}")

            # Handle supplementary configuration if present
            if 'supplementaryConfiguration' in config_item:
                for key, value in config_item['supplementaryConfiguration'].items():
                    if isinstance(value, str):
                        config_item['supplementaryConfiguration'][key] =
 json.loads(value)
                print(f"Supplementary Configuration:
 {config_item['supplementaryConfiguration']}")

            return config_item

        # If needed, you can also access the complete notification from S3
        s3_location = event['s3DeliverySummary']['s3BucketLocation']
        print(f"Complete notification available in S3: {s3_location}")

    return None
```

How it works

1. The function accepts an event parameter containing the AWS Config notification.

2. It checks if the message type is an oversized configuration notification.
3. The function extracts the resource type and ID from the summary.
4. Using the AWS Config client, it retrieves the complete configuration history.
5. The function processes both main and supplementary configurations.
6. If needed, you can access the complete notification from the provided S3 location.

Example Delivery Failed Notification

AWS Config sends a delivery failed notification if AWS Config can't deliver the configuration snapshot or an oversized configuration item change notification to your Amazon S3 bucket. Verify that you specified a valid Amazon S3 bucket.

```
View the Timeline for this Resource in the Console:
    https://console.aws.amazon.com/config/home?region=us-west-2#/timeline/
AWS::EC2::Instance/test_resourceId_014b953d-75e3-40ce-96b9-c7240b975457?
time=2016-10-06T16:46:13.749Z

     The full configuration item change notification for this resource exceeded the
 maximum size allowed by Amazon Simple Notification Service (SNS). A summary of the
 configuration item is provided here. You can view the complete notification in the
 specified Amazon S3 bucket location.

    New State Record Summary:
    ----------------------------
    {
      "configurationItemSummary": {
        "changeType": "UPDATE",
        "configurationItemVersion": "1.2",
        "configurationItemCaptureTime": "2016-10-06T16:46:13.749Z",
        "configurationStateId": 0,
        "awsAccountId": "123456789012",
        "configurationItemStatus": "OK",
        "resourceType": "AWS::EC2::Instance",
        "resourceId": "test_resourceId_014b953d-75e3-40ce-96b9-c7240b975457",
        "resourceName": null,
        "ARN": "arn:aws:ec2:us-west-2:123456789012:instance/
test_resourceId_014b953d-75e3-40ce-96b9-c7240b975457",
        "awsRegion": "us-west-2",
        "availabilityZone": null,
        "configurationStateMd5Hash": "6de64b95eacd30e7b63d4bba7cd80814",
```

```
        "resourceCreationTime": "2016-10-06T16:46:10.489Z"
      },
      "s3DeliverySummary": {
        "s3BucketLocation": null,
        "errorCode": "NoSuchBucket",
        "errorMessage": "Failed to deliver notification to bucket: bucket-example for
account 123456789012 in region us-west-2."
      },
      "notificationCreationTime": "2016-10-06T16:46:13.749Z",
      "messageType": "OversizedConfigurationItemChangeDeliveryFailed",
      "recordVersion": "1.0"
    }
```

Viewing the AWS Config Dashboard

Use the **Dashboard** to see an overview of your resources, rules, conformance packs, and their compliance states and to visualize your AWS Config usage and success metrics with Amazon CloudWatch. This page helps you quickly identify the top resources in your AWS account, the conformance packs with the lowest level of compliance in your AWS account, what rules or resources are noncompliant in your AWS account, what traffic is driving your AWS Config usage, and key metrics for success and failure that have occured in your workflows.

To use the AWS Config Dashboard

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the left navigation pane, choose **Dashboard**.

Contents

- Compliance and Resource Inventory
- AWS Config Usage and Success Metrics

Compliance and Resource Inventory

After setup, AWS Config starts recording your specified resources and evaluating them against your rules. It may take a few minutes for AWS Config to display your resources, rules, conformance packs, and their compliance states.

Conformance packs by compliance score

Conformance packs by compliance score displays up to 10 of your conformance packs with the lowest compliance score. A compliance score is the percentage of the number of compliant rule-resource combinations in a conformance pack compared to the number of total possible rule-resource combinations in the conformance pack.

This metric provides you with a high-level view of the compliance state of your conformance packs, and can be used to identify, investigate, and understand the level of compliance in your conformance packs. You can use the compliance score to track remediation progress, perform

comparisons across different sets of requirements, and see the impact a specific change or deployment has on a conformance pack.

To view the deployment status, compliance score, compliance score timeline, and rules for a conformance pack in a detailed view, choose the name of the conformance pack under **Conformance pack**.

Compliance status

Compliance status displays the number of your compliant and noncompliant rules and compliant and noncompliant resources. Resources are compliant or noncompliant based on an evaluation of the rule associated with it. If a resource does not follow the rule's specifications, the resource and the rule are flagged as noncompliant.

To view the list of noncompliant rules and resources, choose **Noncompliant rule(s)** or **Noncompliant resource(s)**.

Rules by noncompliant resources

Rules by noncompliant resources displays your top noncompliant rules in descending order by the number of resources. Choose a rule to view its details, parameters, and the resources in scope for that specific rule.

For a comprehensive list of noncompliant rules, choose **View all noncompliant rules**.

Resource inventory

Resource inventory displays the total number of resources that AWS Config is recording in descending order by the number of resources, and the count of each resource type in your AWS account. To open all resources for a resource type, choose that resource type to go to its **Resources inventory** page.

You can use the dropdown list to indicate which resource totals you want to view. By default, it is set to view **All resources**, but you can change it to AWS resources, Third-party resources, or Custom resources.

> **Note**
>
> The **Evaluate your AWS resource configuration using Config rules** message may appear on the **Dashboard** for the following reasons:

- You haven't set up AWS Config Rules for your AWS account. You can choose **Add rule** to go to the **Rules** page.
- AWS Config is still evaluating your resources against your rules. You can refresh the page to see the latest evaluation results.
- AWS Config evaluated your resources against your rules and did not find any resources in scope. You can specify the resources for AWS Config to record in the **Settings** page. For more information, see Recording AWS Resources with AWS Config.

AWS Config Usage and Success Metrics

You can use Amazon CloudWatch dashboards in the AWS Config console to visualize your AWS Config usage and success metrics.

For each dashboard, you can do the following:

- Adjust the dashboard time range to display data from the past **3 Hours**, **1 Day**, or **1 Week**.
- Choose the **Calender icon**, to enter a custom time range: either a **Relative** time for a past specified amount of time or an **Absolute** time range between two dates.
- You can change the time format to display dashboard data in **UTC** (Coordinated Universal Time) or **Local time zone** (the time zone specified as your local time zone in the operating system of your device).
- Use the **Drop arrow** next the **Refresh icon** to specify how often the data in a dashboard should refresh, or to turn off the automatic refresh. Choose **Off**, **10 Seconds**, **1 Minute**, **2 Minutes**, **5 Minutes**, or **15 Minutes** to change the refresh internal.
- Choose **More options** (the vertical ellipsis menu) to add the AWS Config usage metrics or the AWS Config success metrics you are currently viewing in the AWS Config Dashboard to the CloudWatch console. This opens a new tab in the CloudWatch console that allows you to create a new custom dashboard in CloudWatch with information copied from your current AWS Config usage metrics or AWS Config success metrics.

If you want to perform additional analyses of these metrics with CloudWatch, choose **Metrics** in the left navigation pane of the CloudWatch console and then choose **AWS/Config**. For more information on what you can do from the CloudWatch console, see Using Amazon CloudWatch dashboards and Using Amazon CloudWatch metrics in the *CloudWatch User Guide*.

AWS Config Usage Metrics

Metric	Description	Unit	
`Configuration Items Recorded`	The number of configuration items recorded for each resource type or all resource types. A configuration item represents a point-in-time view of the various attributes of a supported AWS resource. For more information about configuration items or supported resource types, see Configuration Items and Supported Resource Types.	Count	

You can select the resource type that you want to view by using the dropdown list. By default, it is set to view all resource types.

AWS Config Success Metrics

Metric	Description	Unit	
`Change Notifications Delivery Failed`	The number of failed change notification deliveries to the Amazon SNS topic for your delivery channel. A change notification informs you about a change to the configuration state of your AWS resources. You can use the ConfigStreamDeliveryInfo API to get the `lastErrorCode` or `lastErrorMessage` for the last attempted delivery for a change notification. For more information, see Managing the Delivery Channel.	Count	
`Config History Export Failed`	The number of failed configuration history exports to your Amazon S3 bucket. A configuration history is a collection of the configuration items for a given resource over a specified time period. For more	Count	

Metric	Description	Unit
	information about configuration history, see Configuration History.	
`Configuration Recorder Insufficient Permissions Failure`	The number of failed permission access attempts due to the IAM role policy for all the configuration recorders in your account and AWS Region having insufficient permissions. The configuration recorder detects changes in to the resource types in scope. For the configuration recorder to record your AWS resource configurations, it requires the necessary IAM permissions. For more information, see IAM Role Policy for Getting Configuration Details.	Count
`Config Snapshot Export Failed`	The number of failed configuration snapshot exports to your Amazon S3 bucket. A configuration snapshot is a collection of the configuration items for the supported resources in your account. For more information about configuration snapshots, see Configuration Snapshot.	Count

Managing and Viewing AWS Resource Configurations with AWS Config

AWS Config allows you to assess, audit, and evaluate the configurations of AWS resources.

AWS resources are entities that you create and manage using the AWS Management Console, the AWS Command Line Interface (CLI), the AWS SDKs, or AWS partner tools. Examples of AWS resources include Amazon EC2 instances, security groups, Amazon VPCs, and Amazon Elastic Block Store. AWS Config refers to each resource using its unique identifier, such as the resource ID or an Amazon Resource Name (ARN).

Some common use cases include:

- **Cloud administrator**: You can track and manage resource configurations to help ensure compliance, troubleshoot issues, and maintain an understanding of your AWS environment
- **Security analyst**: You can evaluate resource configurations against desired states to help identify vulnerabilities and assess security posture.
- **Compliance officer**: You can continuously audit and monitor resource configurations to help ensure adherence to organizational policies and industry standards.

Topics

- Supported Resource Types for AWS Config
- Resource Coverage by Region Availability
- Recording AWS Resources with AWS Config
- Recording Configurations with AWS Config for Third-Party Resources using the AWS CLI
- Recording Software Configuration for Managed Instances with AWS Config
- Looking Up Resources That Are Discovered by AWS Config
- Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config
- Viewing Compliance History for your AWS Resources with AWS Config
- Querying Compliance History for your AWS Resources
- Tagging Your AWS Config Resources

Supported Resource Types for AWS Config

> **Important**
>
> This page is updated on a monthly cadence at the beginning of each month.

AWS Config supports the following AWS resources types and resource relationships.

- For more detailed information about a resource type, see its reference information (such as syntax, properties and return values) in the AWS resource and property types reference in the AWS CloudFormation User Guide.
- For AWS Config recording, some AWS Regions support a subset of these resource types. For information on which resource types are supported in which Regions, see Resource Coverage by Region Availability.
- Advanced queries for AWS Config supports a subset of these resource types. For a list of those supported resource types, see Supported Resource Types for Advanced Queries.
- Proactive evaluation for AWS Config supports a subset of these resource types. For a list of those supported resource types, see Supported Resource Types for Proactive Evaluation.
- Periodic rules run without the configuration recorder being enabled since periodic rules do not depend on configuration items (CIs). For more information on the difference between change–triggered rules and periodic rules, see Evaluation Mode and Trigger Types for AWS Config Rules.

  This means that if you view the rule page, there is no listed CI or supported resource. If you select the resource ID, you will see the following error: `The provided resource ID and resource type cannot be found`. This is expected behavior.

> **Note**
>
> **Region availability for resource types**
> Before specifying a resource type for AWS Config to track, check Resource Coverage by Region Availability to see if the resource type is supported in the AWS Region where you set up AWS Config. If a resource type is supported by AWS Config in at least one Region, you can enable the recording of that resource type in all Regions supported by AWS Config, even if the specified resource type is not supported in the AWS Region where you set up AWS Config.

Tagging support for resource types
If a resource type does not support tagging or does not include tag information in its describe API response, AWS Config won't capture tag data in the configuration items (CIs) for that resource type. AWS Config will still record these resources. However, any functionality that relies on tag data won't work. This affects tag-based filtering, grouping, or compliance evaluation that relies on tag data.

Amazon AppStream

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon AppStream	`AWS::AppStream::DirectoryConfig`	NA	NA
	`AWS::AppStream::Application`	NA	NA
	`AWS::AppStream::Stack`	NA	NA
	`AWS::AppStream::Fleet`	NA	NA

Amazon AppFlow

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon AppFlow	`AWS::AppFlow::Flow`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon AppIntegrations	`AWS::AppIntegrations::EventIntegration`	NA	NA
	`AWS::AppIntegrations::Application`	NA	NA

Amazon API Gateway

AWS Service	Resource Type Value	Relationship	Related Resource
API Gateway	`AWS::ApiGateway::Stage`	is contained in	ApiGateway Rest Api
		is associated with	WAFRegional WebACL
	`AWS::ApiGateway::RestApi`	contains	ApiGateway Stage
API Gateway V2	`AWS::ApiGatewayV2::Stage`	is contained in	ApiGatewayV2 Api
	`AWS::ApiGatewayV2::Api`	contains	ApiGatewayV2 Stage

To learn more about how AWS Config integrates with Amazon API Gateway, see Monitoring API Gateway API Configuration with AWS Config.

Amazon Athena

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Athena	`AWS::Athena::WorkGroup`	NA	NA
	`AWS::Athena::DataCatalog`	NA	NA
	`AWS::Athena::PreparedStatement`	NA	NA

Amazon CloudFront

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon CloudFront	`AWS::CloudFront::Distribution`	is associated with	AWS WAF WebACL
			ACM Certificate
			S3 Bucket
			IAM Server Certificate
	`AWS::CloudFront::StreamingDistribution`	is associated with	AWS WAF WebACL
			ACM Certificate
			S3 Bucket
			IAM Server Certificate

Amazon CloudWatch

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon CloudWatch	`AWS::CloudWatch::Alarm`	NA	NA
	`AWS::CloudWatch::MetricStream`	NA	NA
Amazon CloudWatch Logs	`AWS::Logs::Destination`	NA	NA
Amazon CloudWatch RUM	`AWS::RUM::AppMonitor`	NA	NA
Amazon CloudWatch Evidently	`AWS::Evidently::Project`	NA	NA
	`AWS::Evidently::Launch`	NA	NA
	`AWS::Evidently::Segment`	NA	NA

Amazon CodeGuru

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon CodeGuru Reviewer	`AWS::CodeGuruReviewer::RepositoryAssociation`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon CodeGuru Profiler	`AWS::CodeGuruProfiler::ProfilingGroup`	NA	NA

Amazon Cognito

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Cognito	`AWS::Cognito::UserPool`	NA	NA
	`AWS::Cognito::UserPoolClient`	NA	NA
	`AWS::Cognito::UserPoolGroup`	NA	NA
	`AWS::Cognito::IdentityPool`	NA	NA

Amazon Connect

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Connect	`AWS::Connect::PhoneNumber`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Connect::QuickConnect`	NA	NA
	`AWS::Connect::Instance`	NA	NA
	`AWS::Connect::Rule`	NA	NA
	`AWS::Connect::User`	NA	NA
Amazon Connect Customer Profiles	`AWS::CustomerProfiles::Domain`	NA	NA
	`AWS::CustomerProfiles::ObjectType`	NA	NA

Amazon Detective

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Detective	`AWS::Detective::Graph`	NA	NA

Amazon DynamoDB

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon DynamoDB	`AWS::DynamoDB::Table`	NA	NA

Amazon Elastic Compute Cloud

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic Compute Cloud	`AWS::EC2::Host` *	contains	EC2 instance
	`AWS::EC2::EIP`	is attached to	EC2 instance
			Network interface
	`AWS::EC2::Instance`	contains	EC2 network interface
		is associated with	EC2 security group
		is attached to	Amazon EBS volume
			EC2 Elastic IP (EIP)
		is contained in	EC2 Dedicated host
			Route table
			Subnet
			Virtual private cloud (VPC)
	`AWS::EC2::NetworkInterface`	is associated with	EC2 security group
		is attached to	EC2 Elastic IP (EIP)

AWS Service	Resource Type Value	Relationship	Related Resource
			EC2 instance
		is contained in	Route table
			Subnet
			Virtual private cloud (VPC)
	`AWS::EC2::SecurityGroup` *	is associated with	EC2 instance
			EC2 network interface
			Virtual private cloud (VPC)
	`AWS::EC2::NatGateway`	is contained in	Virtual private cloud (VPC)
		is contained in	Subnet
	`AWS::EC2::EgressOnlyInternetGateway`	is attached to	Virtual private cloud (VPC)
	`AWS::EC2::EC2Fleet`	NA	NA
	`AWS::EC2::SpotFleet`	NA	NA
	`AWS::EC2::PrefixList`	NA	NA
	`AWS::EC2::FlowLog`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::EC2::TransitGateway`	NA	NA
	`AWS::EC2::TransitGatewayAttachment`	NA	NA
	`AWS::EC2::TransitGatewayRouteTable`	NA	NA
	`AWS::EC2::VPCEndpoint`	is contained in	Virtual private cloud (VPC)
		is attached to	Network interface
		is contained in	Subnet
		is contained in	Route table
	`AWS::EC2::VPCEndpointService`	is associated with	ElasticLoadBalancingV2 LoadBalancer
	`AWS::EC2::VPCPeeringConnection`	is associated with	Virtual private cloud (VPC)
	`AWS::EC2::RegisteredHAInstance`	is associated with	EC2 instance

AWS Service	Resource Type Value	Relationship	Related Resource
	AWS::EC2::SubnetRouteTableAssociation	NA	NA
	AWS::EC2::LaunchTemplate	NA	NA
	AWS::EC2::NetworkInsightsAccessScopeAnalysis	NA	NA
	AWS::EC2::TrafficMirrorTarget	NA	NA
	AWS::EC2::TrafficMirrorSession	NA	NA
	AWS::EC2::DHCPOptions	NA	NA
	AWS::EC2::IPAM	NA	NA
	AWS::EC2::IPAMResourceDiscovery	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::EC2::IPAMResourceDiscoveryAssociation`	NA	NA
	`AWS::EC2::NetworkInsightsPath`	NA	NA
	`AWS::EC2::TrafficMirrorFilter`	NA	NA
	`AWS::EC2::CapacityReservation`	NA	NA
	`AWS::EC2::ClientVpnEndpoint`	NA	NA
	`AWS::EC2::CustomerGateway`	is attached to	VPN connection
	`AWS::EC2::InternetGateway`	is attached to	Virtual private cloud (VPC)
	`AWS::EC2::NetworkAcl`	NA	NA
	`AWS::EC2::RouteTable`	contains	EC2 instance
			EC2 network interface

AWS Service	Resource Type Value	Relationship	Related Resource
			Subnet
			VPN gateway
		is contained in	Virtual private cloud (VPC)
	`AWS::EC2::Subnet`	contains	EC2 instance
			EC2 network interface
		is attached to	Network ACL
		is contained in	Route table
			Virtual private cloud (VPC)
	`AWS::EC2::VPC`	contains	EC2 instance
			EC2 network interface
			Network ACL
			Route table
			Subnet
		is associated with	Security group
		is attached to	Internet gateway
			VPN gateway
	`AWS::EC2::VPNConnection`	is attached to	Customer gateway
			VPN gateway

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::EC2::VPNConnectionRoute`	NA	NA
	`AWS::EC2::VPNGateway`	is attached to	Virtual private cloud (VPC)
			VPN connection
		is contained in	Route table
	`AWS::EC2::IPAMScope`	NA	NA
	`AWS::EC2::CarrierGateway`	NA	NA
	`AWS::EC2::TransitGatewayConnect`	NA	NA
	`AWS::EC2::IPAMPool`	NA	NA
	`AWS::EC2::TransitGatewayMulticastDomain`	NA	NA
	`AWS::EC2::NetworkInsightsAccessScope`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	AWS::EC2::NetworkInsightsAnalysis	NA	NA
	AWS::EC2::VPCBlockPublicAccessOptions	NA	NA
	AWS::EC2::VPCBlockPublicAccessExclusion	NA	NA
	AWS::EC2::EIPAssociation	NA	NA
	AWS::EC2::InstanceConnectEndpoint	NA	NA
	AWS::EC2::SnapshotBlockPublicAccess	NA	NA
	AWS::EC2::VPCEndpointConnectionNotification	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic Block Store	`AWS::EC2::Volume`	is attached to	EC2 instance
EC2 Image Builder	`AWS::ImageBuilder::ImagePipeline`	NA	NA
	`AWS::ImageBuilder::DistributionConfiguration`	NA	NA
	`AWS::ImageBuilder::ContainerRecipe`	NA	NA
	`AWS::ImageBuilder::InfrastructureConfiguration`	NA	NA
	`AWS::ImageBuilder::ImageRecipe`	NA	NA

*AWS Config records the configuration details of Dedicated hosts and the instances that you launch on them. As a result, you can use AWS Config as a data source when you report compliance with your server-bound software licenses. For example, you can view the configuration history of an instance and determine which Amazon Machine Image (AMI) it is based on. Then, you can look up the configuration history of the host, which includes details such as the numbers of sockets and cores, to check that the host complies with the license requirements of the AMI. For more information, see Tracking Configuration Changes with AWS Config in the *Amazon EC2 User Guide*.

*The EC2 SecurityGroup Properties definition contains IP CIDR blocks, which are converted to IP ranges internally, and may return unexpected results when trying to find a specific IP range. For workarounds to search for specific IP ranges, see Limitations for Advanced Queries.

Amazon Elastic Container Registry

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic Container Registry	`AWS::ECR::Repository`	NA	NA
	`AWS::ECR::RegistryPolicy`	NA	NA
	`AWS::ECR::PullThroughCacheRule`	NA	NA
Amazon Elastic Container Registry Public	`AWS::ECR::PublicRepository`	NA	NA

Amazon Elastic Container Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic Container Service	`AWS::ECS::Cluster`	NA	NA
	`AWS::ECS::TaskDefinition`	NA	NA
	`AWS::ECS::Service` *	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::ECS::TaskSet`	NA	NA
	`AWS::ECS::Capacity Provider`	NA	NA

*This service currently only support the new Amazon Resource Name (ARN) format. For more information, see Amazon Resource Names (ARNs) and IDs in the ECS developer guide.

Old (not supported): `arn:aws:ecs:`*`region`*`:`*`aws_account_id`*`:service/`*`service-name`*

New (supported): `arn:aws:ecs:`*`region`*`:`*`aws_account_id`*`:service/`*`cluster-name`*`/`*`service-name`*

Amazon Elastic File System

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic File System	`AWS::EFS::FileSystem`	NA	NA
	`AWS::EFS::AccessPoint`	NA	NA

Amazon Elastic Kubernetes Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Elastic Kubernetes Service	`AWS::EKS::Cluster`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::EKS::FargateProfile`	NA	NA
	`AWS::EKS::IdentityProviderConfig`	NA	NA
	`AWS::EKS::Addon`	NA	NA

Amazon EMR

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon EMR	`AWS::EMR::SecurityConfiguration`	NA	NA

Amazon EventBridge

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon EventBridge	`AWS::Events::EventBus`	NA	NA
	`AWS::Events::ApiDestination`	NA	NA
	`AWS::Events::Archive`	NA	NA
	`AWS::Events::Endpoint`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Events::Connection`	NA	NA
	`AWS::Events::Rule`	NA	NA
Amazon EventBridge schemas	`AWS::EventSchemas::RegistryPolicy`	NA	NA
	`AWS::EventSchemas::Discoverer`	NA	NA
	`AWS::EventSchemas::Schema`	NA	NA
	`AWS::EventSchemas::Registry`	NA	NA

Amazon Forecast

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Forecast	`AWS::Forecast::Dataset`	NA	NA
	`AWS::Forecast::DatasetGroup`	NA	NA

Amazon Fraud Detector

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Fraud Detector	`AWS::FraudDetector::Label`	NA	NA
	`AWS::FraudDetector::EntityType`	NA	NA
	`AWS::FraudDetector::Variable`	NA	NA
	`AWS::FraudDetector::Outcome`	NA	NA

Amazon GuardDuty

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon GuardDuty	`AWS::GuardDuty::Detector`	NA	NA
	`AWS::GuardDuty::ThreatIntelSet`	NA	NA
	`AWS::GuardDuty::IPSet`	NA	NA
	`AWS::GuardDuty::Filter`	NA	NA

Amazon Inspector

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Inspector	`AWS::InspectorV2::Filter`	NA	NA
	`AWS::InspectorV2::Activation`	NA	NA

Amazon Interactive Video Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Interactive Video Service	`AWS::IVS::Channel`	NA	NA
	`AWS::IVS::RecordingConfiguration`	NA	NA
	`AWS::IVS::PlaybackKeyPair`	NA	NA

Amazon Keyspaces (for Apache Cassandra)

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Keyspaces (for Apache Cassandra)	`AWS::Cassandra::Keyspace`	NA	NA

Amazon OpenSearch Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon OpenSearch Service (legacy Elasticsearch)	`AWS::Elasticsearch::Domain`	is associated with	KMS Key
			EC2 security group
			EC2 subnet
			Virtual private cloud (VPC)
Amazon OpenSearch Service	`AWS::OpenSearch::Domain`	NA	NA
Amazon OpenSearch Serverless	`AWS::OpenSearchServerless::VpcEndpoint`	NA	NA
	`AWS::OpenSearchServerless::Collection`	NA	NA

Amazon OpenSearch Service rename

On September 8, 2021, Amazon Elasticsearch Service was renamed to Amazon OpenSearch Service. OpenSearch Service supports OpenSearch as well as legacy Elasticsearch OSS. For more information, see Amazon OpenSearch Service - Summary of changes.

You might continue to see your data for `AWS::OpenSearch::Domain` under the existing `AWS::Elasticsearch::Domain` resource type for several weeks, even if you upgrade one or more domains to OpenSearch.

Amazon Personalize

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Personalize	`AWS::Personalize::Dataset`	NA	NA
	`AWS::Personalize::Schema`	NA	NA
	`AWS::Personalize::Solution`	NA	NA
	`AWS::Personalize::DatasetGroup`	NA	NA

Amazon Pinpoint

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Pinpoint	`AWS::Pinpoint::ApplicationSettings`	NA	NA
	`AWS::Pinpoint::Segment`	NA	NA
	`AWS::Pinpoint::App`	NA	NA
	`AWS::Pinpoint::Campaign`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Pinpoint::InAppTemplate`	NA	NA
	`AWS::Pinpoint::EmailChannel`	NA	NA
	`AWS::Pinpoint::EmailTemplate`	NA	NA
	`AWS::Pinpoint::EventStream`	NA	NA

Amazon Quantum Ledger Database (Amazon QLDB)

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon QLDB	`AWS::QLDB::Ledger`	NA	NA

Amazon Kendra

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Kendra	`AWS::Kendra::Index`	NA	NA

Amazon Kinesis

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Kinesis	`AWS::Kinesis::Stream`	NA	NA
	`AWS::Kinesis::StreamConsumer`	NA	NA
Amazon Kinesis Analytics V2	`AWS::KinesisAnalyticsV2::Application`	NA	NA
Amazon Data Firehose	`AWS::KinesisFirehose::DeliveryStream`	NA	NA
Kinesis video stream	`AWS::KinesisVideo::SignalingChannel`	NA	NA
	`AWS::KinesisVideo::Stream`	NA	NA

Amazon Lex

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Lex	`AWS::Lex::BotAlias`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Lex::Bot`	NA	NA

Amazon Lightsail

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Lightsail	`AWS::Lightsail::Disk`	NA	NA
	`AWS::Lightsail::Certificate`	NA	NA
	`AWS::Lightsail::Bucket`	NA	NA
	`AWS::Lightsail::StaticIp`	NA	NA

Amazon Lookout for Metrics

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Lookout for Metrics	`AWS::LookoutMetrics::Alert`	NA	NA

Amazon Lookout for Vision

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Lookout for Vision	`AWS::LookoutVision::Project`	NA	NA

Amazon Macie

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Macie	`AWS::Macie::Session`	NA	NA

Amazon Managed Grafana

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Managed Grafana	`AWS::Grafana::Workspace`	NA	NA

Amazon Managed Service for Prometheus

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Managed Service for Prometheus	`AWS::APS::RuleGroupsNamespace`	NA	NA

Amazon MemoryDB

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon MemoryDB	`AWS::MemoryDB::SubnetGroup`	NA	NA

Amazon MQ

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon MQ	`AWS::AmazonMQ::Broker`	NA	NA

Amazon Managed Streaming for Apache Kafka

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Managed Streaming for Apache Kafka	`AWS::MSK::Cluster`	NA	NA
	`AWS::MSK::Configuration`	NA	NA
	`AWS::MSK::BatchScramSecret`	NA	NA
	`AWS::MSK::ClusterPolicy`	NA	NA
	`AWS::MSK::VpcConnection`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Managed Streaming for Apache Kafka Connect	`AWS::KafkaConnect::Connector`	NA	NA

Amazon QuickSight

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon QuickSight	`AWS::QuickSight::DataSource`	NA	NA
	`AWS::QuickSight::Template`	NA	NA
	`AWS::QuickSight::Theme`	NA	NA

Amazon Redshift

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Redshift	`AWS::Redshift::Cluster`	is associated with	Cluster parameter group
			Cluster security group
			Cluster subnet group
			Security group
			Virtual private cloud (VPC)

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Redshift::ClusterParameterGroup`	NA	NA
	`AWS::Redshift::ClusterSecurityGroup`	NA	NA
	`AWS::Redshift::ScheduledAction`	NA	NA
	`AWS::Redshift::ClusterSnapshot`	is associated with	Cluster
			Virtual private cloud (VPC)
	`AWS::Redshift::ClusterSubnetGroup`	is associated with	Subnet
			Virtual private cloud (VPC)
	`AWS::Redshift::EventSubscription`	NA	NA
	`AWS::Redshift::EndpointAccess`	NA	NA
	`AWS::Redshift::EndpointAuthorization`	NA	NA

Amazon Relational Database Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Relational Database Service	`AWS::RDS::DBInstance`	is associated with	EC2 security group
			RDS DB security group
			RDS DB subnet group
	`AWS::RDS::DBSecurityGroup`	is associated with	EC2 security group
			Virtual private cloud (VPC)
	`AWS::RDS::DBSnapshot`	is associated with	Virtual private cloud (VPC)
	`AWS::RDS::DBSubnetGroup`	is associated with	EC2 security group
			Virtual private cloud (VPC)
	`AWS::RDS::EventSubscription`	NA	NA
	`AWS::RDS::DBCluster`	contains	RDS DB instance
		is associated with	RDS DB subnet group
			EC2 security group
	`AWS::RDS::DBClusterSnapshot`	is associated with	RDS DB cluster
			Virtual private cloud (VPC)

AWS Service	Resource Type Value	Relationship	Related Resource
	AWS::RDS::GlobalCluster	NA	NA
	AWS::RDS::OptionGroup	NA	NA

Amazon Route 53

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Route 53	AWS::Route53::HostedZone	NA	NA
	AWS::Route53::HealthCheck	NA	NA
Amazon Route 53 Profiles	AWS::Route53Profiles::Profile	NA	NA
Amazon Route 53 Resolver	AWS::Route53Resolver::ResolverEndpoint	NA	NA
	AWS::Route53Resolver::ResolverRule	NA	NA
	AWS::Route53Resolver::ResolverRuleAssociation	NA	NA
	AWS::Route53Resolver::FirewallDomainList	NA	NA
	AWS::Route53Resolver::FirewallRuleGroupAssociation	NA	NA
	AWS::Route53Resolver::ResolverQueryLoggingConfig	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation`	NA	NA
	`AWS::Route53Resolver::FirewallRuleGroup`	NA	NA
Amazon Application Recovery Controller (ARC)	`AWS::Route53RecoveryReadiness::Cell`	NA	NA
	`AWS::Route53RecoveryReadiness::ReadinessCheck`	NA	NA
	`AWS::Route53RecoveryReadiness::RecoveryGroup`	NA	NA
	`AWS::Route53RecoveryControl::Cluster`	NA	NA
	`AWS::Route53RecoveryControl::ControlPanel`	NA	NA
	`AWS::Route53RecoveryControl::RoutingControl`	NA	NA
	`AWS::Route53RecoveryControl::SafetyRule`	NA	NA
	`AWS::Route53RecoveryReadiness::ResourceSet`	NA	NA

Amazon SageMaker AI

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon SageMaker AI	`AWS::SageMaker::CodeRepository`	NA	NA
	`AWS::SageMaker::Domain`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	AWS::SageMaker::AppImageConfig	NA	NA
	AWS::SageMaker::Image	NA	NA
	AWS::SageMaker::Model	NA	NA
	AWS::SageMaker::NotebookInstance	NA	NA
	AWS::SageMaker::NotebookInstanceLifecycleConfig	NA	NA
	AWS::SageMaker::EndpointConfig	NA	NA
	AWS::SageMaker::Workteam	NA	NA
	AWS::SageMaker::FeatureGroup	NA	NA
	AWS::SageMaker::InferenceExperiment	NA	NA

Amazon Simple Email Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Simple Email Service	`AWS::SES::ConfigurationSet`	NA	NA
	`AWS::SES::ContactList`	NA	NA
	`AWS::SES::Template`	NA	NA
	`AWS::SES::ReceiptFilter`	NA	NA
	`AWS::SES::ReceiptRuleSet`	NA	NA

Amazon Simple Notification Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Simple Notification Service	`AWS::SNS::Topic`	NA	NA

Amazon Simple Queue Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Simple Queue Service	`AWS::SQS::Queue`	NA	NA

Amazon Simple Storage Service

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon Simple Storage Service	`AWS::S3::Bucket` *	NA	NA
	`AWS::S3::AccountPublicAccessBlock`	NA	NA
	`AWS::S3::MultiRegionAccessPoint`	NA	NA
	`AWS::S3::StorageLens`	NA	NA
	`AWS::S3::AccessPoint`	NA	NA
	`AWS::S3::StorageLensGroup`	NA	NA
Amazon S3 Express One Zone	`AWS::S3Express::DirectoryBucket`	NA	NA
	`AWS::S3Express::BucketPolicy`	NA	NA

*If you configured AWS Config to record your S3 buckets, and are not receiving configuration change notifications, check that your S3 bucket policies have the required permissions. For more information, see Managing Permissions for S3 Bucket Recording.

Amazon S3 Bucket Attributes

AWS Config also records the following attributes for the Amazon S3 bucket resource type.

Attributes	Description
AccelerateConfiguration	Transfer acceleration for data over long distances between your client and a bucket.
BucketAcl	Access control list used to manage access to buckets and objects.
BucketPolicy	Policy that defines the permissions to the bucket.
CrossOriginConfiguration	Allow cross-origin requests to the bucket.
LifecycleConfiguration	Rules that define the lifecycle for objects in your bucket.
LoggingConfiguration	Logging used to track requests for access to the bucket.
NotificationConfiguration	Event notifications used to send alerts or trigger workflows for specified bucket events.
ReplicationConfiguration	Automatic, asynchronous copying of objects across buckets in different AWS Regions.
RequestPaymentConfiguration	Requester pays is enabled.
TaggingConfiguration	Tags added to the bucket to categorize. You can also use tagging to track billing.
WebsiteConfiguration	Static website hosting is enabled for the bucket.
VersioningConfiguration	Versioning is enabled for objects in the bucket.

For more information about the attributes, see Bucket Configuration Options in the *Amazon Simple Storage Service User Guide*.

Amazon WorkSpaces

AWS Service	Resource Type Value	Relationship	Related Resource
Amazon WorkSpaces	`AWS::WorkSpaces::ConnectionAlias`	NA	NA
	`AWS::WorkSpaces::Workspace`	NA	NA

AWS Amplify

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Amplify	`AWS::Amplify::App`	NA	NA
	`AWS::Amplify::Branch`	NA	NA

AWS AppConfig

AWS Service	Resource Type Value	Relationship	Related Resource
AWS AppConfig	`AWS::AppConfig::Application`	NA	NA
	`AWS::AppConfig::Environment`	NA	NA
	`AWS::AppConfig::Co`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	nfigurationProfile		
	AWS::AppConfig::DeploymentStrategy	NA	NA
	AWS::AppConfig::HostedConfigurationVersion	NA	NA
	AWS::AppConfig::ExtensionAssociation	NA	NA

AWS App Runner

AWS Service	Resource Type Value	Relationship	Related Resource
AWS App Runner	AWS::AppRunner::VpcConnector	NA	NA
	AWS::AppRunner::Service	NA	NA

AWS App Mesh

AWS Service	Resource Type Value	Relationship	Related Resource
AWS App Mesh	`AWS::AppMesh::VirtualNode`	NA	NA
	`AWS::AppMesh::VirtualService`	NA	NA
	`AWS::AppMesh::VirtualGateway`	NA	NA
	`AWS::AppMesh::VirtualRouter`	NA	NA
	`AWS::AppMesh::Route`	NA	NA
	`AWS::AppMesh::GatewayRoute`	NA	NA
	`AWS::AppMesh::Mesh`	NA	NA

AWS AppSync

AWS Service	Resource Type Value	Relationship	Related Resource
AWS AppSync	`AWS::AppSync::GraphQLApi`	NA	NA

AWS Audit Manager

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Audit Manager	`AWS::AuditManager::Assessment`	NA	NA

AWS Auto Scaling

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Auto Scaling	`AWS::AutoScaling::AutoScalingGroup`	contains	Amazon EC2 instance
		is associated with	Classic Load Balancer
			Auto Scaling launch configuration
			Subnet
	`AWS::AutoScaling::LaunchConfiguration`	is associated with	Amazon EC2 security group
	`AWS::AutoScaling::ScalingPolicy`	is associated with	Auto Scaling group
			Alarm
	`AWS::AutoScaling::ScheduledAction`	is associated with	Auto Scaling group

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::AutoScaling::WarmPool`	NA	NA

AWS Backup

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Backup	`AWS::Backup::BackupPlan`	NA	NA*
	`AWS::Backup::BackupSelection`	NA	NA
	`AWS::Backup::BackupVault`	NA	NA*
	`AWS::Backup::RecoveryPoint`	NA	NA
	`AWS::Backup::ReportPlan`	NA	NA

Due to how AWS Backup works, some of these resource types relate to the other AWS Backup resource types in this table.

`AWS::Backup::BackupPlan` is related to `AWS::Backup::BackupSelection` where a Backup Plan has many selections, and `AWS::Backup::BackupVault` is related to `AWS::Backup::RecoveryPoint` where an AWS Backup Vault has multiple recovery points.

For more information, see Managing backups using backup plans and Working with backup vaults.

AWS Batch

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Batch	`AWS::Batch::JobQueue`	NA	NA
	`AWS::Batch::ComputeEnvironment`	NA	NA
	`AWS::Batch::SchedulingPolicy`	NA	NA

AWS Budgets

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Budgets	`AWS::Budgets::BudgetsAction`	NA	NA

AWS Certificate Manager

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Certificate Manager	`AWS::ACM::Certificate`	NA	NA

AWS CloudFormation

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CloudFormation	`AWS::CloudFormation::Stack` *	contains	Supported AWS resource types

*AWS Config records configuration changes to AWS CloudFormation stacks and supported resource types in the stacks. AWS Config does not record configuration changes for resource types in the stack that are not yet supported. Unsupported resource types appear in the supplementary configuration section of the configuration item for the stack.

AWS CloudTrail

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CloudTrail	`AWS::CloudTrail::Trail`	NA	NA

AWS Cloud9

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Cloud9	`AWS::Cloud9::EnvironmentEC2`	NA	NA

AWS Cloud9 access no longer available to new users

After careful consideration, we have made the decision to close new customer access to AWS Cloud9, effective July 25, 2024. AWS Cloud9 existing customers can continue to use the service as normal. AWS continues to invest in security, availability, and performance

improvements for AWS Cloud9, but we do not plan to introduce new features. For more information, see How to migrate from AWS Cloud9 to AWS IDE Toolkits or AWS CloudShell.

AWS Cloud Map

AWS Service	Resource Type Value	Relationship	Related Resource
Service Discovery	`AWS::ServiceDiscovery::Service`	NA	NA
	`AWS::ServiceDiscovery::PublicDnsNamespace`	NA	NA
	`AWS::ServiceDiscovery::HttpNamespace`	NA	NA
`AWS::ServiceDiscovery::Instance`	NA	NA	

AWS CodeArtifact

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CodeArtifact	`AWS::CodeArtifact::Repository`	NA	NA

AWS CodeBuild

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CodeBuild	`AWS::CodeBuild::Project` *	is associated with	S3 bucket
			IAM role
	`AWS::CodeBuild::ReportGroup`	NA	NA

*To learn more about how AWS Config integrates with AWS CodeBuild, see Use AWS Config with AWS CodeBuild Sample.

AWS CodeDeploy

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CodeDeploy	`AWS::CodeDeploy::Application`	contains	DeploymentGroup
	`AWS::CodeDeploy::DeploymentConfig`	NA	NA
	`AWS::CodeDeploy::DeploymentGroup`	is contained in	Application

AWS CodePipeline

AWS Service	Resource Type Value	Relationship	Related Resource
AWS CodePipeline	`AWS::CodePipeline::Pipeline` *	is attached to	S3 bucket
		is associated with	IAM role
			Code project
			Lambda function
			Cloudformation stack
			ElasticBeanstalk application

*AWS Config records configuration changes to CodePipeline pipelines and supported resource types in the pipelines. AWS Config does not record configuration changes for resource types in the pipelines that are not yet supported. Unsupported resource types such as `CodeCommit repository`, `CodeDeploy application`, `ECS cluster`, and `ECS service` appear in the supplementary configuration section of the configuration item for the stack.

AWS Config

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Config	`AWS::Config::ResourceCompliance` *	is associated with	All resources*
	`AWS::Config::ConformancePackCompliance`	NA	NA
	`AWS::Config::Confi`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`gurationRecorder` *		

*The relationship between `AWS::Config::ResourceCompliance` and a related resource depends on how `AWS::Config::ResourceCompliance` reports compliance for that specific resource type.

*`AWS::Config::ConfigurationRecorder` is a system resource type of AWS Config and recording of this resource type is enabled by default.

> **Note**
>
> Recording for the `AWS::Config::ConformancePackCompliance` and `AWS::Config::ConfigurationRecorder` resource types come with no additional charge.

AWS Database Migration Service

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Database Migration Service	`AWS::DMS::EventSubscription`	NA	NA
	`AWS::DMS::ReplicationSubnetGroup`	NA	NA
	`AWS::DMS::ReplicationInstance`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::DMS::ReplicationTask`	NA	NA
	`AWS::DMS::Certificate`	NA	NA
	`AWS::DMS::Endpoint`	NA	NA

AWS DataSync

AWS Service	Resource Type Value	Relationship	Related Resource
AWS DataSync	`AWS::DataSync::LocationSMB`	NA	NA
	`AWS::DataSync::LocationFSxLustre`	NA	NA
	`AWS::DataSync::LocationFSxWindows`	NA	NA
	`AWS::DataSync::LocationS3`	NA	NA
	`AWS::DataSync::LocationEFS`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::DataSync::LocationNFS`	NA	NA
	`AWS::DataSync::LocationHDFS`	NA	NA
	`AWS::DataSync::LocationObjectStorage`	NA	NA
	`AWS::DataSync::Task`	NA	NA

AWS Device Farm

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Device Farm	`AWS::DeviceFarm::TestGridProject`	NA	NA
	`AWS::DeviceFarm::InstanceProfile`	NA	NA
	`AWS::DeviceFarm::Project`	NA	NA

AWS Elastic Beanstalk

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Elastic Beanstalk	`AWS::ElasticBeanstalk::Application`	contains	Elastic Beanstalk Application Version
			Elastic Beanstalk Environment
		is associated with	IAM role
	`AWS::ElasticBeanstalk::ApplicationVersion`	is contained in	Elastic Beanstalk Application
		is associated with	Elastic Beanstalk Environment
			S3 bucket
	`AWS::ElasticBeanstalk::Environment`	is contained in	Elastic Beanstalk Application
		is associated with	Elastic Beanstalk Application Version
			IAM role
		contains	CloudFormation Stack

AWS Fault Injection Service

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Fault Injection Service	`AWS::FIS::ExperimentTemplate`	NA	NA

AWS Global Accelerator

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Global Accelerator	`AWS::GlobalAccelerator::Listener`	NA	NA
	`AWS::GlobalAccelerator::EndpointGroup`	NA	NA
	`AWS::GlobalAccelerator::Accelerator`	NA	NA

AWS Glue

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Glue	`AWS::Glue::Job`	NA	NA
	`AWS::Glue::Classifier`	NA	NA
	`AWS::Glue::MLTransform`	NA	NA

AWS Ground Station

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Ground Station	`AWS::GroundStation::Config`	NA	NA
	`AWS::GroundStation::MissionProfile`	NA	NA
	`AWS::GroundStation::DataflowEndpointGroup`	NA	NA

AWS HealthLake

AWS Service	Resource Type Value	Relationship	Related Resource
AWS HealthLake	`AWS::HealthLake::FHIRDatastore`	NA	NA

AWS Identity and Access Management (IAM)

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Identity and Access Management	`AWS::IAM::User`	is attached to	IAM group
			IAM customer managed policy

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::IAM::Group`	contains	IAM user
		is attached to	IAM customer managed policy
	`AWS::IAM::Role`	is attached to	IAM customer managed policy
	`AWS::IAM::Policy`	is attached to	IAM user
			IAM group
			IAM role
	`AWS::IAM::SAMLProvider`	NA	NA
	`AWS::IAM::ServerCertificate`	NA	NA
	`AWS::IAM::InstanceProfile`	NA	NA
	`AWS::IAM::OIDCProvider`	NA	NA
AWS Identity and Access Management Access Analyzer	`AWS::AccessAnalyzer::Analyzer`	NA	NA

AWS Config includes inline policies with the configuration details that it records. For more information on inline policies, see Managed policies and inline policies in the IAM User Guide.

AWS IoT

AWS Service	Resource Type Value	Relationship	Related Resource
AWS IoT	`AWS::IoT::Authorizer`	NA	NA
	`AWS::IoT::SecurityProfile`	NA	NA
	`AWS::IoT::RoleAlias`	NA	NA
	`AWS::IoT::Dimension`	NA	NA
	`AWS::IoT::Policy`	NA	NA
	`AWS::IoT::MitigationAction`	NA	NA
	`AWS::IoT::ScheduledAudit`	NA	NA
	`AWS::IoT::AccountAuditConfiguration`	NA	NA
	`AWS::IoTSiteWise::Gateway`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	AWS::IoT::CustomMetric	NA	NA
	AWS::IoT::JobTemplate	NA	NA
	AWS::IoT::ProvisioningTemplate	NA	NA
	AWS::IoT::CACertificate	NA	NA
AWS IoT Wireless	AWS::IoTWireless::ServiceProfile	NA	NA
	AWS::IoTWireless::MulticastGroup	NA	NA
	AWS::IoTWireless::FuotaTask	NA	NA
AWS IoT Core	AWS::IoT::FleetMetric	NA	NA
AWS IoT Analytics	AWS::IoTAnalytics::Datastore	NA	NA
	AWS::IoTAnalytics::Dataset	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::IoTAnalytics::Pipeline`	NA	NA
	`AWS::IoTAnalytics::Channel`	NA	NA
AWS IoT Events	`AWS::IoTEvents::Input`	NA	NA
	`AWS::IoTEvents::DetectorModel`	NA	NA
	`AWS::IoTEvents::AlarmModel`	NA	NA
AWS IoT TwinMaker	`AWS::IoTTwinMaker::Workspace`	NA	NA
	`AWS::IoTTwinMaker::Entity`	NA	NA
	`AWS::IoTTwinMaker::Scene`	NA	NA
	`AWS::IoTTwinMaker::SyncJob`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::IoTTwinMaker::ComponentType`	NA	NA
AWS IoT SiteWise	`AWS::IoTSiteWise::Dashboard`	NA	NA
	`AWS::IoTSiteWise::Project`	NA	NA
	`AWS::IoTSiteWise::Portal`	NA	NA
	`AWS::IoTSiteWise::AssetModel`	NA	NA
AWS IoT Greengrass Version 2	`AWS::GreengrassV2::ComponentVersion`	NA	NA

AWS Key Management Service

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Key Management Service	`AWS::KMS::Key`	NA	NA
	`AWS::KMS::Alias`	NA	NA

AWS Lambda

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Lambda	`AWS::Lambda::Function`	is associated with	IAM role
			EC2 security group
		is contained in	EC2 subnet
	`AWS::Lambda::CodeSigningConfig`	NA	NA

AWS Mainframe Modernization

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Mainframe Modernization	`AWS::M2::Environment`	NA	NA

AWS Network Firewall

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Network Firewall	`AWS::NetworkFirewall::Firewall`	is attached to	EC2 Subnet
		is associated with	NetworkFirewall FirewallPolicy
	`AWS::NetworkFirewall::FirewallPolicy`	is associated with	NetworkFirewall RuleGroup

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::NetworkFirewall::RuleGroup`	NA	NA
	`AWS::NetworkFirewall::TLSInspectionConfiguration`	NA	NA
	`AWS::NetworkFirewall::VpcEndpointAssociation`	NA	NA

AWS Network Manager

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Network Manager	`AWS::NetworkManager::TransitGatewayRegistration`	NA	NA
	`AWS::NetworkManager::Site`	NA	NA
	`AWS::NetworkManager::Device`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::NetworkManager::Link`	NA	NA
	`AWS::NetworkManager::GlobalNetwork`	NA	NA
	`AWS::NetworkManager::CustomerGatewayAssociation`	NA	NA
	`AWS::NetworkManager::LinkAssociation`	NA	NA
	`AWS::NetworkManager::ConnectPeer`	NA	NA

AWS Panorama

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Panorama	`AWS::Panorama::Package`	NA	NA

AWS Private Certificate Authority

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Private Certificate Authority	`AWS::ACMPCA::CertificateAuthority`	NA	NA
	`AWS::ACMPCA::CertificateAuthorityActivation`	NA	NA

AWS Resilience Hub

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Resilience Hub	`AWS::ResilienceHub::ResiliencyPolicy`	NA	NA
	`AWS::ResilienceHub::App`	NA	NA

AWS Resource Explorer

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Resource Explorer	`AWS::ResourceExplorer2::Index`	NA	NA

AWS RoboMaker

AWS Service	Resource Type Value	Relationship	Related Resource
AWS RoboMaker	`AWS::RoboMaker::RobotApplicationVersion`	NA	NA
	`AWS::RoboMaker::RobotApplication`	NA	NA
	`AWS::RoboMaker::SimulationApplication`	NA	NA

AWS Signer

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Signer	`AWS::Signer::SigningProfile`	NA	NA

AWS Secrets Manager

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Secrets Manager	`AWS::SecretsManager::Secret`	is associated with	Lambda function
		is associated with	KMS Key

AWS Security Hub

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Security Hub	`AWS::SecurityHub::Standard`	NA	NA

AWS Service Catalog

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Service Catalog	`AWS::ServiceCatalog::CloudFormationProduct`	is contained in	Portfolio
		is associated with	CloudFormationProvisionedProduct
	`AWS::ServiceCatalog::CloudFormationProvisionedProduct`	is associated with	Portfolio
			CloudFormationProduct
			CloudFormationStack
	`AWS::ServiceCatalog::Portfolio`	contains	CloudFormationProduct

AWS Shield

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Shield	`AWS::Shield::Protection`	is associated with	Amazon CloudFront distribution

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::ShieldRegional::Protection`	is associated with	EC2 EIP
		is associated with	ElasticLoadBalancing Balancer
		is associated with	ElasticLoadBalancingV2 LoadBalancer

AWS Step Functions

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Step Functions	`AWS::StepFunctions::Activity`	NA	NA
	`AWS::StepFunctions::StateMachine`	NA	NA

AWS Systems Manager

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Systems Manager	`AWS::SSM::ManagedInstanceInventory` *	is associated with	EC2 instance
	`AWS::SSM::PatchCompliance`	is associated with	Managed Instance Inventory

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::SSM::AssociationCompliance`	is associated with	Managed Instance Inventory
	`AWS::SSM::FileData`	is associated with	Managed Instance Inventory
	`AWS::SSM::Document`	NA	NA

*To learn more about managed instance inventory, see Recording Software Configuration for Managed Instances.

AWS Transfer Family

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Transfer Family	`AWS::Transfer::Agreement`	NA	NA
	`AWS::Transfer::Connector`	NA	NA
	`AWS::Transfer::Workflow`	NA	NA
	`AWS::Transfer::Certificate`	NA	NA
	`AWS::Transfer::Profile`	NA	NA

AWS WAF

AWS Service	Resource Type Value	Relationship	Related Resource
AWS WAF	`AWS::WAF::RateBasedRule`	NA	NA
	`AWS::WAF::Rule`	NA	NA
	`AWS::WAF::WebACL`	is associated with	WAF Rule
			WAF rate based rule
			WAF Rulegroup
	`AWS::WAF::RuleGroup`	is associated with	WAF Rule
	`AWS::WAFRegional::RateBasedRule`	NA	NA
	`AWS::WAFRegional::Rule`	NA	NA
	`AWS::WAFRegional::WebACL`	is associated with	ElasticLoadBalancingV2 LoadBalancer
			WAFRegional Rule
			WAFRegional rate based rule
			WAFRegional Rulegroup
	`AWS::WAFRegional::RuleGroup`	is associated with	WAFRegional Rule

AWS Service	Resource Type Value	Relationship	Related Resource
AWS WAF V2	`AWS::WAFv2::WebACL`	is associated with	ElasticLoadBalancingV2 LoadBalancer
			ApiGateway Stage
			WAFv2 IPSet
			WAFv2 RegexPatternSet
			WAFv2 RuleGroup
			WAFv2 ManagedRuleSet
	`AWS::WAFv2::RuleGroup`	is associated with	WAFv2 IPSet
			WAFv2 RegexPatternSet
	`AWS::WAFv2::ManagedRuleSet`	is associated with	WAFv2 RuleGroup
	`AWS::WAFv2::IPSet`	NA	NA
	`AWS::WAFv2::RegexPatternSet`	NA	NA

AWS X-Ray

AWS Service	Resource Type Value	Relationship	Related Resource
AWS X-Ray	`AWS::XRay::EncryptionConfig`	NA	NA

Elastic Load Balancing

AWS Service	Resource Type Value	Relationship	Related Resource
Elastic Load Balancing	Application Load Balancer `AWS::ElasticLoadBalancingV2::LoadBalancer`	is associated with	EC2 security group
		is attached to	Subnet
		is contained in	Virtual private cloud (VPC)
	Application Load Balancer Listener `AWS::ElasticLoadBalancingV2::Listener`	NA	NA
	Classic Load Balancer `AWS::ElasticLoadBalancing::LoadBalancer`	is associated with	EC2 security group
		is attached to	Subnet
		is contained in	Virtual private cloud (VPC)
	Network Load Balancer	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`AWS::ElasticLoadBalancingV2::LoadBalancer`		

AWS Elemental MediaConnect

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Elemental MediaConnect	`AWS::MediaConnect::FlowEntitlement`	NA	NA
	`AWS::MediaConnect::FlowVpcInterface`	NA	NA
	`AWS::MediaConnect::FlowSource`	NA	NA
	`AWS::MediaConnect::Gateway`	NA	NA

AWS Elemental MediaPackage

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Elemental MediaPackage	`AWS::MediaPackage:`	NA	NA

AWS Service	Resource Type Value	Relationship	Related Resource
	`:PackagingGroup`		
	`AWS::MediaPackage::PackagingConfiguration`	NA	NA

AWS Elemental MediaTailor

AWS Service	Resource Type Value	Relationship	Related Resource
AWS Elemental MediaTailor	`AWS::MediaTailor::PlaybackConfiguration`	NA	NA

Resource Coverage by Region Availability

North and South America Regions

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ACM::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthority	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ACMPCA::CertificateAuthorityActivation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::APS::RuleGroupsNamespace	No	Yes	Yes	Yes	No	No	No	Yes
AWS::AccessAnalyzer::Analyzer	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AmazonMQ::Broker	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Amplify::App	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Amplify::Branch	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ApiGateway::RestApi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGateway::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AppConfig::Application	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::AppConfig::ConfigurationProfile	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppConfig::DeploymentStrategy	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::Environment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppConfig::ExtensionAssociation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppFlow::Flow	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppIntegrations::Application	No	Yes	Yes	No	No	Yes	No	No
AWS::AppIntegrations::EventIntegration	No	Yes	Yes	No	No	Yes	No	No
AWS::AppMesh::GatewayRoute	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppMesh::Mesh	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppMesh::Route	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::AppMesh::VirtualGateway	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppMesh::VirtualNode	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppMesh::VirtualRouter	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppMesh::VirtualService	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppRunner::Service	No	Yes	Yes	Yes	No	No	No	No
AWS::AppRunner::VpcConnector	No	Yes	Yes	Yes	No	No	No	No
AWS::AppStream::Application	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppStream::DirectoryConfig	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::AppStream::Fleet	No	Yes	Yes	Yes	No	Yes	No	No
AWS::AppStream::Stack	No	Yes	Yes	Yes	No	Yes	No	No
AWS::AppSync::ApiCache	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::AppSync::GraphQLApi	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Athena::DataCatalog	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Athena::PreparedStatement	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Athena::WorkGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AuditManager::Assessment	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::AutoScaling::AutoScalingGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScalingPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Backup::BackupPlan	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Backup::BackupSelection	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::BackupVault	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::RecoveryPoint	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::ReportPlan	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Batch::ComputeEnvironment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Batch::JobQueue	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Budgets::BudgetsAction	No	Yes	No	No	No	No	No	No
AWS::Cassandra::Keyspace	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Cloud9::EnvironmentEC2	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CloudFormation::Stack	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::CloudFront::Distribution	No	Yes	No	No	No	No	No	No
AWS::CloudFront::StreamingDistribution	No	Yes	No	No	No	No	No	No
AWS::CloudTrail::Trail	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::MetricStream	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CodeArtifact::Repository	No	Yes	Yes	Yes	No	No	No	No
AWS::CodeBuild::Project	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CodeDeploy::Application	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CodeDeploy::DeploymentConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::CodeDeploy::DeploymentGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::CodeGuruProfiler::ProfilingGroup	No	Yes	Yes	Yes	No	No	No	No
AWS::CodeGuruReviewer::RepositoryAssociation	No	Yes	Yes	Yes	No	No	No	No
AWS::CodePipeline::Pipeline	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Cognito::IdentityPool	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cognito::UserPool	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cognito::UserPoolClient	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cognito::UserPoolGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Config::ConfigurationRecorder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Config::ConformancePackCompliance	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Config::ResourceCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Connect::Instance	No	Yes	Yes	No	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Connect::PhoneNumber	No	Yes	Yes	No	No	Yes	No	No
AWS::Connect::QuickConnect	No	Yes	Yes	No	No	Yes	No	No
AWS::Connect::Rule	No	Yes	Yes	No	No	Yes	No	No
AWS::Connect::User	No	Yes	Yes	No	No	Yes	No	No
AWS::CustomerProfiles::Domain	No	Yes	Yes	No	No	Yes	No	No
AWS::CustomerProfiles::ObjectType	No	Yes	Yes	No	No	Yes	No	No
AWS::DMS::Certificate	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DMS::Endpoint	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DMS::EventSubscription	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DMS::ReplicationInstance	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DMS::ReplicationSubnetGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::DMS::ReplicationTask	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Data Sync::LocationEFS	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::Loc ationFSxLustre	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::Loc ationFSxWindows	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::Loc ationHDFS	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Data Sync::LocationNFS	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::Loc ationObjectStorage	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::LocationS3	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Data Sync::LocationSMB	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::DataSync::Task	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Detective::Graph	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::DeviceFarm::InstanceProfile	No	No	Yes	No	No	No	No	No
AWS::DeviceFarm::Project	No	No	Yes	No	No	No	No	No
AWS::DeviceFarm::TestGridProject	No	No	Yes	No	No	No	No	No
AWS::DynamoDB::Table	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::CarrierGateway	No	Yes	Yes	Yes	No	Yes	No	No
AWS::EC2::ClientVpnEndpoint	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::ClientVpnTargetNetworkAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::CustomerGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::EC2Fleet	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::EC2::EIP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EIPAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EgressOnlyInternetGateway	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::FlowLog	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::Host	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAM	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::IPAMPool	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::IPAMResourceDiscovery	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::IPAMResourceDiscoveryAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::IPAMScope	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::Instance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::EC2::Instance ConnectEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::InternetGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NatGateway	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NetworkAcl	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::NetworkInsightsAccessScope	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NetworkInsightsAccessScopeAnalysis	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NetworkInsightsAnalysis	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NetworkInsightsPath	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::NetworkInterface	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::EC2::RegisteredHAInstance	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::RouteTable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::SpotFleet	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::Subnet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TrafficMirrorSession	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::TrafficMirrorTarget	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::TransitGateway	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::EC2::TransitGatewayAttachment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::TransitGatewayConnect	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EC2::VPC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPCEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCPeeringConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::EC2::VPNConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnectionRoute	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPNGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::Volume	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECR::PublicRepository	No	Yes	No	No	No	No	No	No
AWS::ECR::PullThroughCacheRule	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECR::RegistryPolicy	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECR::Repository	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECS::CapacityProvider	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECS::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ECS::TaskDefinition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::TaskSet	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EFS::AccessPoint	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EFS::FileSystem	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EKS::Addon	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EKS::Cluster	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EKS::FargateProfile	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EKS::IdentityProviderConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ElasticBeanstalk::Application	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ElasticBeanstalk::ApplicationVersion	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ElasticBeanstalk::Environment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EventSchemas::Discoverer	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EventSchemas::Registry	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EventSchemas::RegistryPolicy	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::EventSchemas::Schema	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Events::ApiDestination	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Events::Archive	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Events::Connection	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Events::Endpoint	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Events::EventBus	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::Rule	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Evidently::Launch	No	Yes	Yes	Yes	No	No	No	No
AWS::Evidently::Project	No	Yes	Yes	Yes	No	No	No	No
AWS::Evidently::Segment	No	Yes	Yes	Yes	No	No	No	No
AWS::FIS::ExperimentTemplate	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Forecast::Dataset	No	Yes	Yes	Yes	No	No	No	No
AWS::Forecast::DatasetGroup	No	Yes	Yes	Yes	No	No	No	No
AWS::FraudDetector::EntityType	No	Yes	Yes	Yes	No	No	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::FraudDetector::Label	No	Yes	Yes	Yes	No	No	No	No
AWS::FraudDetector::Outcome	No	Yes	Yes	Yes	No	No	No	No
AWS::FraudDetector::Variable	No	Yes	Yes	Yes	No	No	No	No
AWS::GlobalAccelerator::Accelerator	No	No	Yes	No	No	No	No	No
AWS::GlobalAccelerator::EndpointGroup	No	No	Yes	No	No	No	No	No
AWS::GlobalAccelerator::Listener	No	No	Yes	No	No	No	No	No
AWS::Glue::Classifier	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Glue::Job	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Glue::MLTransform	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Grafana::Workspace	No	Yes	Yes	Yes	No	No	No	No
AWS::GreengrassV2::ComponentVersion	No	Yes	Yes	Yes	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::GroundStation::Config	No	Yes	Yes	Yes	No	No	No	Yes
AWS::GroundStation::DataflowEndpointGroup	No	Yes	Yes	Yes	No	No	No	Yes
AWS::GroundStation::MissionProfile	No	Yes	Yes	Yes	No	No	No	Yes
AWS::GuardDuty::Detector	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::GuardDuty::Filter	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::GuardDuty::IPSet	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::GuardDuty::ThreatIntelSet	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::HealthLake::FHIRDatastore	No	Yes	Yes	Yes	No	No	No	No
AWS::IAM::Group	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IAM::InstanceProfile	No	Yes	No	No	No	No	No	No
AWS::IAM::OIDCProvider	No	Yes	No	No	No	No	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::IAM::Policy	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IAM::Role	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IAM::SAMLProvider	No	Yes	No	No	No	No	No	No
AWS::IAM::ServerCertificate	No	Yes	No	No	No	No	No	No
AWS::IAM::User	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IVS::Channel	No	Yes	Yes	No	No	No	No	No
AWS::IVS::PlaybackKeyPair	No	Yes	Yes	No	No	No	No	No
AWS::IVS::RecordingConfiguration	No	Yes	Yes	No	No	No	No	No
AWS::ImageBuilder::ContainerRecipe	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ImageBuilder::ImageRecipe	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::InspectorV2::Activation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::InspectorV2::Filter	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::AccountAuditConfiguration	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoT::Authorizer	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::CACertificate	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::CustomMetric	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoT::Dimension	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoT::FleetMetric	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::JobTemplate	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::IoT::MitigationAction	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoT::Policy	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::ProvisioningTemplate	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::RoleAlias	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::IoT::ScheduledAudit	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoT::SecurityProfile	Yes	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTAnalytics::Channel	No	Yes	Yes	Yes	No	No	No	No
AWS::IoTAnalytics::Dataset	No	Yes	Yes	Yes	No	No	No	No
AWS::IoTAnalytics::Datastore	No	Yes	Yes	Yes	No	No	No	No
AWS::IoTAnalytics::Pipeline	No	Yes	Yes	Yes	No	No	No	No
AWS::IoTEvents::AlarmModel	No	Yes	Yes	Yes	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::IoTEvents::DetectorModel	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTEvents::Input	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTSiteWise::AssetModel	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTSiteWise::Dashboard	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTSiteWise::Gateway	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTSiteWise::Portal	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTSiteWise::Project	No	Yes	Yes	Yes	No	Yes	No	No
AWS::IoTTwinMaker::ComponentType	No	Yes	Yes	No	No	No	No	No
AWS::IoTTwinMaker::Entity	No	Yes	Yes	No	No	No	No	No
AWS::IoTTwinMaker::Scene	No	Yes	Yes	No	No	No	No	No
AWS::IoTTwinMaker::SyncJob	No	Yes	Yes	No	No	No	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::IoTTwinMaker::Workspace	No	Yes	Yes	No	No	No	No	No
AWS::IoTWireless::FuotaTask	No	Yes	Yes	No	No	No	No	Yes
AWS::IoTWireless::MulticastGroup	No	Yes	Yes	No	No	No	No	Yes
AWS::IoTWireless::ServiceProfile	No	Yes	Yes	No	No	No	No	Yes
AWS::KMS::Alias	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::KMS::Key	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::KafkaConnect::Connector	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Kendra::Index	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Kinesis::Stream	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Kinesis::StreamConsumer	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::KinesisFirehose::DeliveryStream	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::KinesisVideo::SignalingChannel	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::KinesisVideo::Stream	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Lambda::CodeSigningConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Lambda::Function	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Lex::Bot	No	Yes	Yes	No	No	Yes	No	No
AWS::Lex::BotAlias	No	Yes	Yes	No	No	Yes	No	No
AWS::Lightsail::Bucket	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Lightsail::Certificate	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Lightsail::Disk	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Lightsail::StaticIp	No	Yes	Yes	Yes	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Logs::Destination	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::LookoutMetrics::Alert	No	Yes	Yes	Yes	No	No	No	No
AWS::LookoutVision::Project	No	Yes	Yes	Yes	No	No	No	No
AWS::M2::Environment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MSK::BatchScramSecret	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MSK::Cluster	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MSK::ClusterPolicy	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MSK::Configuration	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MSK::VpcConnection	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Macie::Session	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaConnect::FlowEntitlement	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::MediaConnect::FlowSource	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaConnect::FlowVpcInterface	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaConnect::Gateway	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaPackage::PackagingConfiguration	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaPackage::PackagingGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MediaTailor::PlaybackConfiguration	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::MemoryDB::SubnetGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::NetworkFirewall::Firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::TLSInspectionConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkManager::ConnectPeer	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::CustomerGatewayAssociation	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::Device	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::GlobalNetwork	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::Link	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::LinkAssociation	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::Site	No	No	Yes	No	No	No	No	No
AWS::NetworkManager::TransitGatewayRegistration	No	No	Yes	No	No	No	No	No
AWS::OpenSearch::Domain	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::OpenSearchServerless::Collection	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::OpenSearchServerless::VpcEndpoint	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Panorama::Package	No	Yes	Yes	No	No	Yes	No	No
AWS::Personalize::Dataset	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Personalize::DatasetGroup	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Personalize::Schema	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Personalize::Solution	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Pinpoint::App	No	Yes	Yes	No	No	Yes	No	No
AWS::Pinpoint::ApplicationSettings	No	Yes	Yes	No	No	Yes	No	No
AWS::Pinpoint::Campaign	No	Yes	Yes	No	No	Yes	No	No
AWS::Pinpoint::EmailChannel	No	Yes	Yes	No	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Pinpoint::EmailTemplate	No	Yes	Yes	No	No	Yes	No	No
AWS::Pinpoint::EventStream	No	Yes	Yes	No	No	Yes	No	No
AWS::Pinpoint::InAppTemplate	No	Yes	Yes	Yes	No	Yes	No	No
AWS::Pinpoint::Segment	No	Yes	Yes	No	No	Yes	No	No
AWS::QLDB::Ledger	No	Yes	Yes	Yes	No	Yes	No	No
AWS::QuickSight::DataSource	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::QuickSight::Template	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::QuickSight::Theme	No	Yes	Yes	Yes	No	Yes	No	Yes
AWS::RDS::DBCluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::RDS::DBSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::GlobalCluster	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::RDS::OptionGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::RUM::AppMonitor	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Redshift::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Redshift::ClusterSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::EndpointAccess	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Redshift::EndpointAuthorization	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Redshift::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ScheduledAction	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ResilienceHub::App	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ResilienceHub::ResiliencyPolicy	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ResourceExplorer2::Index	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::RoboMaker::RobotApplication	No	Yes	Yes	Yes	No	No	No	No
AWS::RoboMaker::RobotApplicationVersion	No	Yes	Yes	Yes	No	No	No	No
AWS::RoboMaker::SimulationApplication	No	Yes	Yes	Yes	No	No	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Route53::HealthCheck	No	Yes	No	No	No	No	No	No
AWS::Route53::HostedZone	No	Yes	No	No	No	No	No	No
AWS::Route53Profiles::Profile	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53RecoveryControl::Cluster	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryControl::ControlPanel	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryControl::RoutingControl	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryControl::SafetyRule	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryReadiness::Cell	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryReadiness::ReadinessCheck	No	No	Yes	No	No	No	No	No
AWS::Route53RecoveryReadiness::RecoveryGroup	No	No	Yes	No	No	No	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Route53RecoveryReadiness::ResourceSet	No	No	Yes	No	No	No	No	No
AWS::Route53Resolver::FirewallDomainList	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::FirewallRuleGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::ResolverEndpoint	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::ResolverRule	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::S3::AccessPoint	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::S3::AccountPublicAccessBlock	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::S3::Bucket	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::MultiRegionAccessPoint	No	No	Yes	No	No	No	No	No
AWS::S3::StorageLens	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::S3::StorageLensGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::S3Express::BucketPolicy	No	Yes	Yes	Yes	No	No	No	No
AWS::S3Express::DirectoryBucket	No	Yes	Yes	Yes	No	No	No	No
AWS::SES::ConfigurationSet	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SES::ContactList	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SES::ReceiptFilter	No	Yes	Yes	Yes	No	Yes	No	No
AWS::SES::ReceiptRuleSet	No	Yes	Yes	Yes	No	Yes	No	No

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::SES::Template	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SNS::Topic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SQS::Queue	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SSM::AssociationCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::Document	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SSM::FileData	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::PatchCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SageMaker::AppImageConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::CodeRepository	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::Domain	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::SageMaker::EndpointConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::FeatureGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::Image	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::InferenceExperiment	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::Model	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::NotebookInstance	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::SageMaker::Workteam	No	Yes	Yes	Yes	No	Yes	No	No
AWS::SecretsManager::Secret	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ServiceCatalog::Portfolio	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceDiscovery::Instance	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::ServiceDiscovery::PublicDnsNamespace	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceDiscovery::Service	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Shield::Protection	No	Yes	No	No	No	No	No	No
AWS::ShieldRegional::Protection	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Signer::SigningProfile	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Step Functions::Activity	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::StepFunctions::StateMachine	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::Transfer::Agreement	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::Transfer::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Connector	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Profile	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Workflow	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAF::RateBasedRule	No	Yes	No	No	No	No	No	No
AWS::WAF::Rule	No	Yes	No	No	No	No	No	No
AWS::WAF::RuleGroup	No	Yes	No	No	No	No	No	No
AWS::WAF::WebACL	No	Yes	No	No	No	No	No	No
AWS::WAFRegional::RateBasedRule	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::WAFRegional::Rule	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Resource type	US West (N. California)	US East (N. Virginia)	US West (Oregon)	US East (Ohio)	Canada West (Calgary)	Canada (Central)	Mexico (Central)	South America (São Paulo)
AWS::WAFRegional::RuleGroup	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::WAFRegional::WebACL	Yes	Yes	Yes	Yes	No	Yes	No	Yes
AWS::WAFv2::IPSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::ManagedRuleSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RegexPatternSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WorkSpaces::ConnectionAlias	No	Yes	Yes	No	No	Yes	No	Yes
AWS::WorkSpaces::Workspace	No	Yes	Yes	No	No	Yes	No	Yes
AWS::XRay::EncryptionConfig	Yes	Yes	Yes	Yes	No	Yes	No	Yes

Europe Regions

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::ACM::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthorityActivation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::APS::RuleGroupsNamespace	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::AccessAnalyzer::Analyzer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AmazonMQ::Broker	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Amplify::App	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Amplify::Branch	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ApiGateway::RestApi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGateway::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::ApiGatewayV2::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AppConfig::Application	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppConfig::ConfigurationProfile	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppConfig::DeploymentStrategy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AppConfig::Environment	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppConfig::ExtensionAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppFlow::Flow	Yes	Yes	Yes	Yes	No	No	No	No
AWS::AppIntegrations::Application	No	Yes	Yes	No	No	No	No	No
AWS::AppIntegrations::EventIntegration	No	Yes	Yes	No	No	No	No	No
AWS::AppMesh::GatewayRoute	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppMesh::Mesh	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::AppMesh::Route	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppMesh::VirtualGateway	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppMesh::VirtualNode	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppMesh::VirtualRouter	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppMesh::VirtualService	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::AppRunner::Service	Yes	Yes	Yes	Yes	No	No	No	No
AWS::AppRunner::VpcConnector	Yes	Yes	No	Yes	No	No	No	No
AWS::AppStream::Application	Yes	Yes	Yes	No	No	No	No	No
AWS::AppStream::DirectoryConfig	Yes	Yes	Yes	No	No	No	No	No
AWS::AppStream::Fleet	Yes	Yes	Yes	No	No	No	No	No
AWS::AppStream::Stack	Yes	Yes	Yes	No	No	No	No	No
AWS::AppSync::ApiCache	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::AppSync::GraphQLApi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Athena::DataCatalog	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Athena::PreparedStatement	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
AWS::Athena::WorkGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AuditManager::Assessment	Yes	Yes	Yes	No	No	No	No	No
AWS::AutoScaling::AutoScalingGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScalingPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Backup::BackupPlan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Backup::BackupSelection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Backup::BackupVault	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Backup::RecoveryPoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Backup::ReportPlan	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Batch::ComputeEnvironment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Batch::JobQueue	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Cassandra::Keyspace	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Cloud9::EnvironmentEC2	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CloudFormation::Stack	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CloudTrail::Trail	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::MetricStream	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::CodeArtifact::Repository	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CodeBuild::Project	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CodeDeploy::Application	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CodeDeploy::DeploymentConfig	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CodeDeploy::DeploymentGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::CodeGuruProfiler::ProfilingGroup	Yes	Yes	Yes	No	Yes	No	No	No
AWS::CodeGuruReviewer::RepositoryAssociation	Yes	Yes	Yes	No	Yes	No	No	No
AWS::CodePipeline::Pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Cognito::IdentityPool	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Cognito::UserPool	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Cognito::UserPoolClient	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Cognito::UserPoolGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Config::ConfigurationRecorder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Config::ConformancePackCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Config::ResourceCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Connect::Instance	No	Yes	Yes	No	No	No	No	No
AWS::Connect::PhoneNumber	No	Yes	Yes	No	No	No	No	No
AWS::Connect::QuickConnect	No	Yes	Yes	No	No	No	No	No
AWS::Connect::Rule	No	Yes	Yes	No	No	No	No	No
AWS::Connect::User	No	Yes	Yes	No	No	No	No	No
AWS::CustomerProfiles::Domain	No	Yes	Yes	No	No	No	No	No
AWS::CustomerProfiles::ObjectType	No	Yes	Yes	No	No	No	No	No
AWS::DMS::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::DMS::Endpoint	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DMS::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DMS::ReplicationInstance	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DMS::ReplicationSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DMS::ReplicationTask	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DataSync::LocationEFS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::DataSync::LocationFSxLustre	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DataSync::LocationFSxWindows	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DataSync::LocationHDFS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::DataSync::LocationNFS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::DataSync::LocationObjectStorage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::DataSync::LocationS3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::DataSync::LocationSMB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::DataSync::Task	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Detective::Graph	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::DynamoDB::Table	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::CarrierGateway	Yes	Yes	Yes	Yes	No	No	No	No
AWS::EC2::ClientVpnEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::ClientVpnTargetNetworkAssociation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::CustomerGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EC2Fleet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EC2::EIP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EIPAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EgressOnlyInternetGateway	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::FlowLog	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::Host	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAMPool	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAMResourceDiscovery	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAMResourceDiscoveryAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAMScope	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::Instance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::InstanceConnectEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EC2::InternetGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::EC2::NatGateway	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::NetworkAcl	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::NetworkInsightsAccessScope	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::EC2::NetworkInsightsAccessScopeAnalysis	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::EC2::NetworkInsightsAnalysis	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::EC2::NetworkInsightsPath	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::EC2::NetworkInterface	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::RegisteredHAInstance	Yes	Yes	Yes	Yes	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EC2::RouteTable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SpotFleet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::Subnet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::TrafficMirrorSession	Yes	Yes	Yes	Yes	Yes	No	No	Yes
AWS::EC2::TrafficMirrorTarget	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::TransitGatewayAttachment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::TransitGatewayConnect	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCPeeringConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnectionRoute	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EC2::Volume	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECR::PullThroughCacheRule	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECR::RegistryPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECR::Repository	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::CapacityProvider	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::TaskDefinition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::TaskSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EFS::AccessPoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EFS::FileSystem	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EKS::Addon	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EKS::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EKS::FargateProfile	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EKS::IdentityProviderConfig	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ElasticBeanstalk::Application	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ElasticBeanstalk::ApplicationVersion	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ElasticBeanstalk::Environment	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EventSchemas::Discoverer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::EventSchemas::Registry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EventSchemas::RegistryPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EventSchemas::Schema	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Events::ApiDestination	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Events::Archive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Events::Connection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Events::Endpoint	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Events::EventBus	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Events::Rule	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Evidently::Launch	Yes	Yes	No	No	Yes	No	No	No
AWS::Evidently::Project	Yes	Yes	No	No	Yes	No	No	No
AWS::Evidently::Segment	Yes	Yes	No	No	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::FIS::ExperimentTemplate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
AWS::Forecast::Dataset	Yes	Yes	No	No	No	No	No	No
AWS::Forecast::DatasetGroup	Yes	Yes	No	No	No	No	No	No
AWS::FraudDetector::EntityType	Yes	No	No	No	No	No	No	No
AWS::FraudDetector::Label	Yes	No	No	No	No	No	No	No
AWS::FraudDetector::Outcome	Yes	No	No	No	No	No	No	No
AWS::FraudDetector::Variable	Yes	No	No	No	No	No	No	No
AWS::Glue::Classifier	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Glue::Job	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Glue::MLTransform	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Grafana::Workspace	Yes	Yes	Yes	No	No	No	No	No
AWS::GreengrassV2::ComponentVersion	Yes	Yes	Yes	No	No	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::GroundStation::Config	Yes	Yes	No	No	Yes	No	No	No
AWS::GroundStation::DataflowEndpointGroup	Yes	Yes	No	No	Yes	No	No	No
AWS::GroundStation::MissionProfile	Yes	Yes	No	No	Yes	No	No	No
AWS::GuardDuty::Detector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::GuardDuty::Filter	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::GuardDuty::IPSet	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::GuardDuty::ThreatIntelSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::IAM::Group	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::IAM::Policy	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::IAM::Role	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::IAM::User	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::IVS::Channel	Yes	Yes	No	No	No	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::IVS::PlaybackKeyPair	Yes	Yes	No	No	No	No	No	No
AWS::IVS::RecordingConfiguration	Yes	Yes	No	No	No	No	No	No
AWS::ImageBuilder::ContainerRecipe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ImageBuilder::ImageRecipe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::InspectorV2::Activation	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::InspectorV2::Filter	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IoT::AccountAuditConfiguration	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::Authorizer	Yes	Yes	Yes	Yes	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::IoT::CACertificate	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::CustomMetric	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::Dimension	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::FleetMetric	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::JobTemplate	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::MitigationAction	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::Policy	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::ProvisioningTemplate	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::RoleAlias	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::ScheduledAudit	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoT::SecurityProfile	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::IoTAnalytics::Channel	Yes	Yes	No	No	No	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::IoTAnalytics::Dataset	Yes	Yes	No	No	No	No	No	No
AWS::IoTAnalytics::Datastore	Yes	Yes	No	No	No	No	No	No
AWS::IoTAnalytics::Pipeline	Yes	Yes	No	No	No	No	No	No
AWS::IoTEvents::AlarmModel	Yes	Yes	Yes	No	No	No	No	No
AWS::IoTEvents::DetectorModel	Yes	Yes	Yes	No	No	No	No	No
AWS::IoTEvents::Input	Yes	Yes	Yes	No	No	No	No	No
AWS::IoTSiteWise::AssetModel	Yes	Yes	No	No	No	No	No	No
AWS::IoTSiteWise::Dashboard	Yes	Yes	No	No	No	No	No	No
AWS::IoTSiteWise::Gateway	Yes	Yes	No	No	No	No	No	No
AWS::IoTSiteWise::Portal	Yes	Yes	No	No	No	No	No	No
AWS::IoTSiteWise::Project	Yes	Yes	No	No	No	No	No	No
AWS::IoTTwinMaker::ComponentType	Yes	Yes	No	No	No	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::IoTTwinMaker::Entity	Yes	Yes	No	No	No	No	No	No
AWS::IoTTwinMaker::Scene	Yes	Yes	No	No	No	No	No	No
AWS::IoTTwinMaker::SyncJob	Yes	Yes	No	No	No	No	No	No
AWS::IoTTwinMaker::Workspace	Yes	Yes	No	No	No	No	No	No
AWS::IoTWireless::FuotaTask	Yes	Yes	No	No	No	No	No	No
AWS::IoTWireless::MulticastGroup	Yes	Yes	No	No	No	No	No	No
AWS::IoTWireless::ServiceProfile	Yes	Yes	No	No	No	No	No	No
AWS::KMS::Alias	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::KMS::Key	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::KafkaConnect::Connector	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Kendra::Index	Yes	No	Yes	No	No	No	No	No
AWS::Kinesis::Stream	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Kinesis::StreamConsumer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::KinesisFirehose::DeliveryStream	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::KinesisVideo::SignalingChannel	Yes	Yes	Yes	Yes	No	No	No	No
AWS::KinesisVideo::Stream	Yes	Yes	Yes	Yes	No	No	No	No
AWS::Lambda::CodeSigningConfig	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Lambda::Function	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Lex::Bot	Yes	Yes	Yes	No	No	No	No	No
AWS::Lex::BotAlias	Yes	Yes	Yes	No	No	No	No	No
AWS::Lightsail::Bucket	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Lightsail::Certificate	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Lightsail::Disk	Yes	Yes	Yes	Yes	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Lightsail::StaticIp	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Logs::Destination	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::LookoutMetrics::Alert	Yes	Yes	No	No	Yes	No	No	No
AWS::LookoutVision::Project	Yes	Yes	No	No	No	No	No	No
AWS::M2::Environment	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::MSK::BatchScramSecret	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::MSK::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::MSK::ClusterPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::MSK::Configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::MSK::VpcConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Macie::Session	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::MediaConnect::FlowEntitlement	Yes	Yes	Yes	Yes	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::MediaConnect::FlowSource	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::MediaConnect::FlowVpcInterface	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::MediaConnect::Gateway	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::MediaPackage::PackagingConfiguration	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::MediaPackage::PackagingGroup	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::MediaTailor::PlaybackConfiguration	Yes	Yes	No	Yes	Yes	No	No	No
AWS::MemoryDB::SubnetGroup	Yes	Yes	Yes	No	Yes	No	No	No
AWS::NetworkFirewall::Firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::TLSInspectionConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::OpenSearch::Domain	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::OpenSearchServerless::Collection	Yes	Yes	Yes	Yes	No	No	No	No
AWS::OpenSearchServerless::VpcEndpoint	Yes	Yes	Yes	Yes	No	No	No	No
AWS::Panorama::Package	Yes	No	No	No	No	No	No	No
AWS::Personalize::Dataset	Yes	Yes	No	No	No	No	No	No
AWS::Personalize::DatasetGroup	Yes	Yes	No	No	No	No	No	No
AWS::Personalize::Schema	Yes	Yes	No	No	No	No	No	No
AWS::Personalize::Solution	Yes	Yes	No	No	No	No	No	No
AWS::Pinpoint::App	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::ApplicationSettings	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::Campaign	Yes	Yes	Yes	No	No	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Pinpoint::EmailChannel	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::EmailTemplate	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::EventStream	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::InAppTemplate	Yes	Yes	Yes	No	No	No	No	No
AWS::Pinpoint::Segment	Yes	Yes	Yes	No	No	No	No	No
AWS::QLDB::Ledger	Yes	Yes	Yes	No	No	No	No	No
AWS::QuickSight::DataSource	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::QuickSight::Template	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::QuickSight::Theme	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::RDS::DBCluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::RDS::DBSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::GlobalCluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::OptionGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RUM::AppMonitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Redshift::EndpointAccess	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Redshift::EndpointAuthorization	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::Redshift::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ScheduledAction	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ResilienceHub::App	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ResilienceHub::ResiliencyPolicy	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ResourceExplorer2::Index	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RoboMaker::RobotApplication	Yes	Yes	No	No	No	No	No	No
AWS::RoboMaker::RobotApplicationVersion	Yes	Yes	No	No	No	No	No	No
AWS::RoboMaker::SimulationApplication	Yes	Yes	No	No	No	No	No	No
AWS::Route53Profiles::Profile	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Route53Resolver::FirewallDomainList	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::Route53Resolver::FirewallRuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Route53Resolver::ResolverEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Route53Resolver::ResolverRule	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::AccessPoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::AccountPublicAccessBlock	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::Bucket	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::StorageLens	Yes	Yes	Yes	Yes	Yes	No	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::S3::StorageLensGroup	Yes	Yes	Yes	Yes	Yes	No	No	No
AWS::S3Express::BucketPolicy	Yes	No	No	No	Yes	No	No	No
AWS::S3Express::DirectoryBucket	Yes	No	No	No	Yes	No	No	No
AWS::SES::ConfigurationSet	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SES::ContactList	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SES::ReceiptFilter	Yes	Yes	Yes	No	No	No	No	No
AWS::SES::ReceiptRuleSet	Yes	Yes	Yes	No	No	No	No	No
AWS::SES::Template	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SNS::Topic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SQS::Queue	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SSM::AssociationCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::Document	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::SSM::FileData	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::PatchCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SageMaker::AppImageConfig	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
AWS::SageMaker::CodeRepository	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::Domain	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::EndpointConfig	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::FeatureGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
AWS::SageMaker::Image	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
AWS::SageMaker::InferenceExperiment	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::Model	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::NotebookInstance	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::SageMaker::Workteam	Yes	Yes	Yes	No	No	No	No	No
AWS::SecretsManager::Secret	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::Portfolio	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceDiscovery::Instance	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::ServiceDiscovery::PublicDnsNamespace	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceDiscovery::Service	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::ShieldRegional::Protection	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Signer::SigningProfile	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Step Functions::Activity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::StepFunctions::StateMachine	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Transfer::Agreement	Yes	Yes	Yes	Yes	Yes	Yes	No	No
AWS::Transfer::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Transfer::Connector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Transfer::Profile	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Transfer::Workflow	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFRegional::RateBasedRule	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFRegional::Rule	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFRegional::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Europe (Ireland)	Europe (Frankfurt)	Europe (London)	Europe (Paris)	Europe (Stockholm)	Europe (Milan)	Europe (Spain)	Europe (Zurich)
AWS::WAFRegional::WebACL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::IPSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::ManagedRuleSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RegexPatternSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WorkSpaces::ConnectionAlias	Yes	Yes	Yes	No	No	No	No	No
AWS::WorkSpaces::Workspace	Yes	Yes	Yes	No	No	No	No	No
AWS::XRay::EncryptionConfig	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Asia Pacific Regions

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::ACM::Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthority	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ACMPCA::CertificateAuthorityActivation	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::APS::RuleGroupsNamespace	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::AccessAnalyzer::Analyzer	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AmazonMQ::Broker	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Amplify::App	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Amplify::Branch	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ApiGateway::RestApi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::ApiGateway::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Stage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AppConfig::Application	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::ConfigurationProfile	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::DeploymentStrategy	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::Environment	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::ExtensionAssociation	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppFlow::Flow	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::AppIntegrations::Application	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::AppIntegrations::EventIntegration	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::AppMesh::GatewayRoute	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::Mesh	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::Route	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::VirtualGateway	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::VirtualNode	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::VirtualRouter	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppMesh::VirtualService	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppRunner::Service	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::AppRunner::VpcConnector	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes
AWS::AppStream::Application	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::AppStream::DirectoryConfig	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::AppStream::Fleet	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::AppStream::Stack	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::AppSync::ApiCache	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::AppSync::GraphQLApi	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Athena::DataCatalog	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Athena::PreparedStatement	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Athena::WorkGroup	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::AuditManager::Assessment	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes
AWS::AutoScaling::AutoScalingGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScalingPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::BackupPlan	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::BackupSelection	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::BackupVault	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Backup::RecoveryPoint	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::Backup::ReportPlan	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Batch::ComputeEnvironment	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Batch::JobQueue	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cassandra::Keyspace	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Cloud9::EnvironmentEC2	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CloudFormation::Stack	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CloudTrail::Trail	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::CloudWatch::MetricStream	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeArtifact::Repository	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::CodeBuild::Project	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeDeploy::Application	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeDeploy::DeploymentConfig	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeDeploy::DeploymentGroup	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::CodeGuruProfiler::ProfilingGroup	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::CodeGuruReviewer::RepositoryAssociation	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::CodePipeline::Pipeline	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Cognito::IdentityPool	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cognito::UserPool	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::Cognito::UserPoolClient	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Cognito::UserPoolGroup	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Config::ConfigurationRecorder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Config::ConformancePackCompliance	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Config::ResourceCompliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Connect::Instance	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::Connect::PhoneNumber	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::Connect::QuickConnect	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::Connect::Rule	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::Connect::User	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::CustomerProfiles::Domain	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes

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AWS::CustomerProfiles::ObjectType	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::DMS::Certificate	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DMS::Endpoint	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DMS::EventSubscription	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DMS::ReplicationInstance	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DMS::ReplicationSubnetGroup	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DMS::ReplicationTask	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationEFS	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationFSxLustre	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationFSxWindows	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::DataSync::LocationHDFS	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationNFS	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationObjectStorage	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationS3	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::LocationSMB	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::DataSync::Task	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Detective::Graph	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::DynamoDB::Table	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::CarrierGateway	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes
AWS::EC2::ClientVpnEndpoint	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::ClientVpnTargetNetworkAssociation	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::CustomerGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::EC2Fleet	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::EIP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EIPAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::EgressOnlyInternetGateway	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::FlowLog	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::Host	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::IPAM	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::IPAMPool	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::IPAMResourceDiscovery	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::IPAMResourceDiscoveryAssociation	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::IPAMScope	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::Instance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::InstanceConnectEndpoint	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::InternetGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::NatGateway	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::NetworkAcl	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::NetworkInsightsAccessScope	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::NetworkInsightsAccessScopeAnalysis	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::NetworkInsightsAnalysis	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::EC2::NetworkInsightsPath	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::NetworkInterface	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::RegisteredHAInstance	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::EC2::RouteTable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::SpotFleet	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::Subnet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TrafficMirrorSession	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TrafficMirrorTarget	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGateway	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGatewayAttachment	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGatewayConnect	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::VPC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EC2::VPCEndpoint	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPCPeeringConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnectionRoute	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EC2::VPNGateway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EC2::Volume	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECR::PullThroughCacheRule	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECR::RegistryPolicy	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECR::Repository	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECS::CapacityProvider	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ECS::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::TaskDefinition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ECS::TaskSet	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EFS::AccessPoint	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::EFS::FileSystem	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EKS::Addon	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EKS::Cluster	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EKS::FargateProfile	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EKS::IdentityProviderConfig	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ElasticBeanstalk::Application	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ElasticBeanstalk::ApplicationVersion	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ElasticBeanstalk::Environment	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::EventSchemas::Discoverer	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EventSchemas::Registry	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EventSchemas::RegistryPolicy	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::EventSchemas::Schema	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::ApiDestination	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::Archive	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::Connection	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::Endpoint	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::Events::EventBus	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Events::Rule	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Evidently::Launch	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::Evidently::Project	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::Evidently::Segment	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::FIS::ExperimentTemplate	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Forecast::Dataset	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Forecast::DatasetGroup	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::FraudDetector::EntityType	No	No	No	No	No	No	No	No	Yes	Yes	No	No
AWS::FraudDetector::Label	No	No	No	No	No	No	No	No	Yes	Yes	No	No
AWS::FraudDetector::Outcome	No	No	No	No	No	No	No	No	Yes	Yes	No	No

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AWS::FraudDetector::Variable	No	No	No	No	No	No	No	No	Yes	Yes	No	No
AWS::Glue::Classifier	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Glue::Job	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Glue::MLTransform	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Grafana::Workspace	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::GreengrassV2::ComponentVersion	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::GroundStation::Config	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No
AWS::GroundStation::DataflowEndpointGroup	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No
AWS::GroundStation::MissionProfile	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No
AWS::GuardDuty::Detector	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::GuardDuty::Filter	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::GuardDuty::IPSet	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::GuardDuty::ThreatIntelSet	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::HealthLake::FHIRDatastore	No	No	No	No	No	Yes	No	No	No	No	No	No
AWS::IAM::Group	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IAM::Policy	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IAM::Role	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IAM::User	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IVS::Channel	No	No	No	No	No	Yes	No	Yes	No	No	No	Yes
AWS::IVS::PlaybackKeyPair	No	No	No	No	No	Yes	No	Yes	No	No	No	Yes
AWS::IVS::RecordingConfiguration	No	No	No	No	No	Yes	No	Yes	No	No	No	Yes

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AWS::ImageBuilder::ContainerRecipe	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::ImageRecipe	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::InspectorV2::Activation	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::InspectorV2::Filter	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::IoT::AccountAuditConfiguration	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::Authorizer	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes

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AWS::IoT::CACertificate	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::CustomMetric	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::Dimension	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::FleetMetric	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::JobTemplate	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::MitigationAction	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::Policy	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::ProvisioningTemplate	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::RoleAlias	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::ScheduledAudit	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoT::SecurityProfile	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes

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AWS::IoTAnalytics::Channel	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes
AWS::IoTAnalytics::Dataset	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes
AWS::IoTAnalytics::Datastore	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes
AWS::IoTAnalytics::Pipeline	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes
AWS::IoTEvents::AlarmModel	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTEvents::DetectorModel	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTEvents::Input	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTSiteWise::AssetModel	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTSiteWise::Dashboard	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTSiteWise::Gateway	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTSiteWise::Portal	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::IoTSiteWise::Project	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTTwinMaker::ComponentType	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTTwinMaker::Entity	No	No	No	No	No	No	No	No	Yes	Yes	No	No
AWS::IoTTwinMaker::Scene	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTTwinMaker::SyncJob	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTTwinMaker::Workspace	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::IoTWireless::FuotaTask	No	No	No	No	No	No	No	No	No	Yes	No	Yes
AWS::IoTWireless::MulticastGroup	No	No	No	No	No	No	No	No	No	Yes	No	Yes
AWS::IoTWireless::ServiceProfile	No	No	No	No	No	No	No	No	No	Yes	No	Yes
AWS::KMS::Alias	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::KMS::Key	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::KafkaConnect::Connector	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Kendra::Index	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes
AWS::Kinesis::Stream	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Kinesis::StreamConsumer	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::KinesisFirehose::DeliveryStream	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::KinesisVideo::SignalingChannel	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::KinesisVideo::Stream	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Lambda::CodeSigningConfig	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Lambda::Function	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Lex::Bot	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::Lex::BotAlias	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::Lightsail::Bucket	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Lightsail::Certificate	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Lightsail::Disk	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Lightsail::StaticIp	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Logs::Destination	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::LookoutMetrics::Alert	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes
AWS::LookoutVision::Project	No	No	No	No	No	No	No	Yes	No	No	No	Yes
AWS::M2::Environment	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::MSK::BatchScramSecret	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MSK::Cluster	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::MSK::ClusterPolicy	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MSK::Configuration	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MSK::VpcConnection	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Macie::Session	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaConnect::FlowEntitlement	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaConnect::FlowSource	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaConnect::FlowVpcInterface	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaConnect::Gateway	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaPackage::PackagingConfiguration	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MediaPackage::PackagingGroup	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::MediaTailor::PlaybackConfiguration	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::MemoryDB::SubnetGroup	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::NetworkFirewall::Firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::TLSInspectionConfiguration	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::OpenSearch::Domain	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::OpenSearchServerless::Collection	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes

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AWS::OpenSearchServerless::VpcEndpoint	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes
AWS::Panorama::Package	No	No	No	No	No	No	No	No	Yes	Yes	No	No
AWS::Personalize::Dataset	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Personalize::DatasetGroup	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Personalize::Schema	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Personalize::Solution	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::App	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::ApplicationSettings	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::Campaign	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::EmailChannel	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::EmailTemplate	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::Pinpoint::EventStream	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::InAppTemplate	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Pinpoint::Segment	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::QLDB::Ledger	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes
AWS::QuickSight::DataSource	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::QuickSight::Template	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::QuickSight::Theme	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::RDS::DBCluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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AWS::RDS::DBSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::RDS::GlobalCluster	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::RDS::OptionGroup	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::RUM::AppMonitor	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Redshift::Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSubnetGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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AWS::Redshift::EndpointAccess	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Redshift::EndpointAuthorization	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::Redshift::EventSubscription	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::Redshift::ScheduledAction	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::ResilienceHub::App	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::ResilienceHub::ResiliencyPolicy	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::ResourceExplorer2::Index	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::RoboMaker::RobotApplication	No	No	No	No	No	No	No	No	Yes	No	No	Yes
AWS::RoboMaker::RobotApplicationVersion	No	No	No	No	No	No	No	No	Yes	No	No	Yes
AWS::RoboMaker::SimulationApplication	No	No	No	No	No	No	No	No	Yes	No	No	Yes

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AWS::Route53Profiles::Profile	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::FirewallDomainList	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::FirewallRuleGroup	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::ResolverEndpoint	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::Route53Resolver::ResolverRule	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::S3::AccessPoint	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::S3::AccountPublicAccessBlock	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::S3::Bucket	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::S3::StorageLens	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::S3::StorageLensGroup	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::S3Express::BucketPolicy	No	No	No	No	No	Yes	No	No	No	No	No	Yes
AWS::S3Express::DirectoryBucket	No	No	No	No	No	Yes	No	No	No	No	No	Yes
AWS::SES::ConfigurationSet	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::SES::ContactList	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SES::ReceiptFilter	No	No	Yes	No	No	No	No	No	Yes	Yes	No	Yes
AWS::SES::ReceiptRuleSet	No	No	Yes	No	No	No	No	No	Yes	Yes	No	Yes
AWS::SES::Template	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SNS::Topic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SQS::Queue	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SSM::AssociationCompliance	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
AWS::SSM::Document	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SSM::FileData	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SSM::PatchCompliance	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::SageMaker::AppImageConfig	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::CodeRepository	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::Domain	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::EndpointConfig	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::FeatureGroup	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::Image	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::InferenceExperiment	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::Model	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::NotebookInstance	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::SageMaker::Workteam	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::SecretsManager::Secret	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceCatalog::Portfolio	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceDiscovery::Instance	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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AWS::ServiceDiscovery::PublicDnsNamespace	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::ServiceDiscovery::Service	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::ShieldRegional::Protection	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Signer::SigningProfile	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::StepFunctions::Activity	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::StepFunctions::StateMachine	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Agreement	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Certificate	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Connector	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::Transfer::Profile	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::Transfer::Workflow	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAFRegional::RateBasedRule	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAFRegional::Rule	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAFRegional::RuleGroup	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAFRegional::WebACL	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AWS::WAFv2::IPSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::ManagedRuleSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RegexPatternSet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AWS::WorkSpaces::ConnectionAlias	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes

Resource type	Asia Pacific (Hong Kong)	Asia Pacific (Hyderabad)	Asia Pacific (Jakarta)	Asia Pacific (Malaysia)	Asia Pacific (Melbourne)	Asia Pacific (Mumbai)	Asia Pacific (Osaka)	Asia Pacific (Seoul)	Asia Pacific (Singapore)	Asia Pacific (Sydney)	Asia Pacific (Thailand)	Asia Pacific (Tokyo)
AWS::WorkSpaces::Workspace	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes
AWS::XRay::EncryptionConfig	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

China Regions

Resource type	China (Beijing)	China (Ningxia)
AWS::ACM::Certificate	Yes	Yes
AWS::AmazonMQ::Broker	Yes	Yes
AWS::ApiGateway::RestApi	Yes	Yes
AWS::ApiGateway::Stage	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes
AWS::ApiGatewayV2::Stage	Yes	Yes
AWS::AppConfig::Application	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::AppConfig::ConfigurationProfile	Yes	Yes
AWS::AppConfig::DeploymentStrategy	Yes	Yes
AWS::AppConfig::Environment	Yes	Yes
AWS::AppConfig::ExtensionAssociation	Yes	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	Yes
AWS::AppSync::ApiCache	Yes	Yes
AWS::AppSync::GraphQLApi	Yes	Yes
AWS::Athena::DataCatalog	Yes	Yes
AWS::Athena::PreparedStatement	Yes	Yes
AWS::Athena::WorkGroup	Yes	Yes
AWS::AutoScaling::AutoScalingGroup	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::AutoScaling::ScalingPolicy	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	Yes
AWS::Backup::BackupPlan	Yes	Yes
AWS::Backup::BackupSelection	Yes	Yes
AWS::Backup::BackupVault	Yes	Yes
AWS::Backup::RecoveryPoint	Yes	Yes
AWS::Batch::ComputeEnvironment	Yes	Yes
AWS::Batch::JobQueue	Yes	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes
AWS::Cassandra::Keyspace	Yes	Yes
AWS::CloudFormation::Stack	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::CloudTrail::Trail	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes
AWS::CloudWatch::MetricStream	Yes	Yes
AWS::CodeBuild::Project	Yes	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes
AWS::Cognito::IdentityPool	Yes	No
AWS::Config::ConfigurationRecorder	Yes	Yes
AWS::Config::ResourceCompliance	Yes	Yes
AWS::DMS::Certificate	Yes	Yes
AWS::DMS::Endpoint	Yes	Yes
AWS::DMS::EventSubscription	Yes	Yes
AWS::DMS::ReplicationInstance	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::DMS::ReplicationSubnetGroup	Yes	Yes
AWS::DMS::ReplicationTask	Yes	Yes
AWS::DataSync::LocationEFS	Yes	Yes
AWS::DataSync::LocationHDFS	Yes	Yes
AWS::DataSync::LocationNFS	Yes	Yes
AWS::DataSync::LocationObjectStorage	Yes	Yes
AWS::DataSync::LocationS3	Yes	Yes
AWS::DataSync::LocationSMB	Yes	Yes
AWS::DataSync::Task	Yes	Yes
AWS::DynamoDB::Table	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::EC2::EC2Fleet	Yes	Yes
AWS::EC2::EIP	Yes	Yes
AWS::EC2::EIPAssociation	Yes	Yes
AWS::EC2::FlowLog	Yes	Yes
AWS::EC2::Host	Yes	Yes
AWS::EC2::Instance	Yes	Yes
AWS::EC2::InternetGateway	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	Yes
AWS::EC2::NatGateway	Yes	Yes
AWS::EC2::NetworkAcl	Yes	Yes
AWS::EC2::NetworkInterface	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::EC2::RouteTable	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes
AWS::EC2::SpotFleet	Yes	Yes
AWS::EC2::Subnet	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes
AWS::EC2::TrafficMirrorSession	Yes	Yes
AWS::EC2::TrafficMirrorTarget	Yes	Yes
AWS::EC2::TransitGateway	Yes	Yes
AWS::EC2::TransitGatewayAttachment	Yes	Yes
AWS::EC2::TransitGatewayConnect	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	Yes
AWS::EC2::VPC	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes
AWS::EC2::VPCEndpoint	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	Yes
AWS::EC2::VPCPeeringConnection	Yes	Yes
AWS::EC2::VPNGateway	Yes	No
AWS::EC2::Volume	Yes	Yes
AWS::ECR::Repository	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::ECS::CapacityProvider	Yes	Yes
AWS::ECS::Cluster	Yes	Yes
AWS::ECS::Service	Yes	Yes
AWS::ECS::TaskDefinition	Yes	Yes
AWS::ECS::TaskSet	Yes	Yes
AWS::EFS::AccessPoint	Yes	Yes
AWS::EFS::FileSystem	Yes	Yes
AWS::EKS::Addon	Yes	Yes
AWS::EKS::Cluster	Yes	Yes
AWS::EKS::FargateProfile	Yes	Yes
AWS::EKS::IdentityProviderConfig	Yes	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::ElasticBeanstalk::Application	Yes	Yes
AWS::ElasticBeanstalk::ApplicationVersion	Yes	Yes
AWS::ElasticBeanstalk::Environment	Yes	Yes
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	Yes
AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes
AWS::Events::Archive	Yes	Yes
AWS::Events::EventBus	Yes	Yes
AWS::Events::Rule	Yes	Yes
AWS::Glue::Classifier	Yes	Yes
AWS::Glue::Job	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::Glue::MLTransform	Yes	No
AWS::GreengrassV2::ComponentVersion	Yes	No
AWS::GuardDuty::Filter	Yes	Yes
AWS::GuardDuty::ThreatIntelSet	Yes	Yes
AWS::IAM::Group	Yes	Yes
AWS::IAM::InstanceProfile	Yes	No
AWS::IAM::OIDCProvider	Yes	No
AWS::IAM::Policy	Yes	Yes
AWS::IAM::Role	Yes	Yes
AWS::IAM::SAMLProvider	Yes	No
AWS::IAM::ServerCertificate	Yes	No
AWS::IAM::User	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::ImageBuilder::ContainerRecipe	Yes	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes
AWS::ImageBuilder::ImageRecipe	Yes	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes
AWS::InspectorV2::Activation	Yes	Yes
AWS::IoT::AccountAuditConfiguration	Yes	Yes
AWS::IoT::Authorizer	Yes	Yes
AWS::IoT::CACertificate	Yes	Yes
AWS::IoT::CustomMetric	Yes	Yes
AWS::IoT::Dimension	Yes	Yes
AWS::IoT::FleetMetric	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::IoT::JobTemplate	Yes	Yes
AWS::IoT::MitigationAction	Yes	Yes
AWS::IoT::Policy	Yes	Yes
AWS::IoT::ProvisioningTemplate	Yes	Yes
AWS::IoT::RoleAlias	Yes	Yes
AWS::IoT::ScheduledAudit	Yes	Yes
AWS::IoT::SecurityProfile	Yes	Yes
AWS::IoTAnalytics::Channel	Yes	No
AWS::IoTAnalytics::Dataset	Yes	No
AWS::IoTAnalytics::Datastore	Yes	No
AWS::IoTAnalytics::Pipeline	Yes	No
AWS::IoTEvents::AlarmModel	Yes	No

Resource type	China (Beijing)	China (Ningxia)
AWS::IoTEvents::DetectorModel	Yes	No
AWS::IoTEvents::Input	Yes	No
AWS::IoTSiteWise::AssetModel	Yes	No
AWS::IoTSiteWise::Dashboard	Yes	No
AWS::IoTSiteWise::Gateway	Yes	No
AWS::IoTSiteWise::Portal	Yes	No
AWS::IoTSiteWise::Project	Yes	No
AWS::KMS::Alias	Yes	Yes
AWS::KMS::Key	Yes	Yes
AWS::Kinesis::Stream	Yes	Yes
AWS::Kinesis::StreamConsumer	Yes	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::KinesisFirehose::DeliveryStream	Yes	Yes
AWS::Lambda::Function	Yes	No
AWS::Logs::Destination	Yes	Yes
AWS::MSK::BatchScramSecret	Yes	Yes
AWS::MSK::Cluster	Yes	Yes
AWS::MSK::ClusterPolicy	Yes	Yes
AWS::MSK::Configuration	Yes	Yes
AWS::MSK::VpcConnection	Yes	Yes
AWS::NetworkFirewall::Firewall	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes
AWS::NetworkFirewall::TLSInspectionConfiguration	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes
AWS::OpenSearch::Domain	Yes	Yes
AWS::Personalize::Dataset	Yes	No
AWS::Personalize::DatasetGroup	Yes	No
AWS::Personalize::Schema	Yes	No
AWS::Personalize::Solution	Yes	No
AWS::RDS::DBCluster	No	Yes
AWS::RDS::DBClusterSnapshot	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes
AWS::RDS::DBSecurityGroup	Yes	Yes
AWS::RDS::DBSnapshot	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::RDS::EventSubscription	Yes	Yes
AWS::RDS::OptionGroup	Yes	Yes
AWS::Redshift::Cluster	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes
AWS::Redshift::ClusterSubnetGroup	Yes	Yes
AWS::Redshift::EventSubscription	Yes	Yes
AWS::Route53Profiles::Profile	Yes	Yes
AWS::Route53Resolver::FirewallDomainList	Yes	Yes
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	Yes
AWS::Route53Resolver::ResolverEndpoint	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation	Yes	Yes
AWS::Route53Resolver::ResolverRule	Yes	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	Yes
AWS::S3::AccessPoint	Yes	Yes
AWS::S3::AccountPublicAccessBlock	Yes	Yes
AWS::S3::Bucket	Yes	Yes
AWS::S3::StorageLensGroup	Yes	Yes
AWS::SES::ConfigurationSet	No	Yes
AWS::SES::ContactList	No	Yes
AWS::SES::Template	No	Yes
AWS::SNS::Topic	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::SQS::Queue	Yes	Yes
AWS::SSM::AssociationCompliance	Yes	Yes
AWS::SSM::Document	Yes	Yes
AWS::SSM::FileData	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes
AWS::SSM::PatchCompliance	Yes	Yes
AWS::SageMaker::AppImageConfig	Yes	Yes
AWS::SageMaker::CodeRepository	Yes	Yes
AWS::SageMaker::Domain	Yes	Yes
AWS::SageMaker::EndpointConfig	Yes	Yes
AWS::SageMaker::FeatureGroup	Yes	Yes
AWS::SageMaker::Image	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::SageMaker::Model	Yes	Yes
AWS::SageMaker::NotebookInstance	Yes	Yes
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	Yes
AWS::SecretsManager::Secret	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	Yes
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	Yes
AWS::ServiceCatalog::Portfolio	Yes	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes
AWS::ServiceDiscovery::Instance	Yes	Yes
AWS::ServiceDiscovery::PublicDnsNamespace	Yes	Yes
AWS::ServiceDiscovery::Service	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::StepFunctions::Activity	Yes	No
AWS::StepFunctions::StateMachine	Yes	Yes
AWS::Transfer::Agreement	Yes	Yes
AWS::Transfer::Certificate	Yes	Yes
AWS::Transfer::Connector	Yes	Yes
AWS::Transfer::Profile	Yes	Yes
AWS::Transfer::Workflow	Yes	Yes
AWS::WAFRegional::RateBasedRule	Yes	Yes
AWS::WAFRegional::Rule	Yes	Yes
AWS::WAFRegional::RuleGroup	Yes	Yes
AWS::WAFRegional::WebACL	Yes	Yes
AWS::WAFv2::IPSet	Yes	Yes

Resource type	China (Beijing)	China (Ningxia)
AWS::WAFv2::ManagedRuleSet	Yes	Yes
AWS::WAFv2::RegexPatternSet	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes
AWS::WorkSpaces::Workspace	No	Yes

Africa and Middle East Regions

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::ACM::Certificate	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthority	Yes	Yes	Yes	Yes
AWS::ACMPCA::CertificateAuthorityActivation	Yes	Yes	Yes	Yes
AWS::AccessAnalyzer::Analyzer	Yes	Yes	Yes	Yes
AWS::AmazonMQ::Broker	Yes	No	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Amplify::App	No	No	Yes	No
AWS::Amplify::Branch	No	No	Yes	No
AWS::ApiGateway::RestApi	Yes	Yes	Yes	Yes
AWS::ApiGateway::Stage	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes	Yes	Yes
AWS::ApiGatewayV2::Stage	Yes	Yes	Yes	Yes
AWS::AppConfig::Application	Yes	Yes	Yes	No
AWS::AppConfig::ConfigurationProfile	Yes	Yes	Yes	No
AWS::AppConfig::DeploymentStrategy	Yes	Yes	Yes	Yes
AWS::AppConfig::Environment	Yes	Yes	Yes	No
AWS::AppConfig::ExtensionAssociation	Yes	Yes	Yes	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	Yes	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::AppFlow::Flow	Yes	No	No	No
AWS::AppIntegrations::Application	Yes	No	No	No
AWS::AppIntegrations::EventIntegration	Yes	No	No	No
AWS::AppMesh::GatewayRoute	Yes	Yes	Yes	No
AWS::AppMesh::Mesh	Yes	Yes	Yes	No
AWS::AppMesh::Route	Yes	Yes	Yes	No
AWS::AppMesh::VirtualGateway	Yes	Yes	Yes	No
AWS::AppMesh::VirtualNode	Yes	Yes	Yes	No
AWS::AppMesh::VirtualRouter	Yes	Yes	Yes	No
AWS::AppMesh::VirtualService	Yes	Yes	Yes	No
AWS::AppSync::ApiCache	Yes	Yes	Yes	Yes
AWS::AppSync::GraphQLApi	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Athena::DataCatalog	Yes	Yes	Yes	Yes
AWS::Athena::PreparedStatement	Yes	Yes	Yes	Yes
AWS::Athena::WorkGroup	Yes	Yes	Yes	Yes
AWS::AutoScaling::AutoScalingGroup	Yes	Yes	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScalingPolicy	Yes	Yes	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	No	Yes	No
AWS::Backup::BackupPlan	Yes	Yes	Yes	Yes
AWS::Backup::BackupSelection	Yes	Yes	Yes	Yes
AWS::Backup::BackupVault	Yes	Yes	Yes	Yes
AWS::Backup::RecoveryPoint	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Backup::ReportPlan	Yes	No	Yes	No
AWS::Batch::ComputeEnvironment	Yes	No	Yes	Yes
AWS::Batch::JobQueue	Yes	No	Yes	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes	Yes	Yes
AWS::Cassandra::Keyspace	No	No	Yes	No
AWS::Cloud9::EnvironmentEC2	Yes	No	Yes	No
AWS::CloudFormation::Stack	Yes	No	Yes	No
AWS::CloudTrail::Trail	Yes	Yes	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes	Yes	Yes
AWS::CloudWatch::MetricStream	Yes	Yes	Yes	Yes
AWS::CodeBuild::Project	Yes	Yes	Yes	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::CodeDeploy::Application	Yes	No	Yes	No
AWS::CodeDeploy::DeploymentConfig	Yes	No	Yes	No
AWS::CodeDeploy::DeploymentGroup	Yes	No	Yes	No
AWS::CodePipeline::Pipeline	No	Yes	No	Yes
AWS::Cognito::IdentityPool	Yes	Yes	Yes	Yes
AWS::Cognito::UserPool	Yes	Yes	Yes	Yes
AWS::Cognito::UserPoolClient	Yes	Yes	Yes	Yes
AWS::Cognito::UserPoolGroup	Yes	Yes	Yes	Yes
AWS::Config::ConfigurationRecorder	Yes	Yes	Yes	Yes
AWS::Config::ConformancePackCompliance	Yes	Yes	Yes	Yes
AWS::Config::ResourceCompliance	Yes	Yes	Yes	Yes
AWS::Connect::Instance	Yes	No	No	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Connect::PhoneNumber	Yes	No	No	No
AWS::Connect::QuickConnect	Yes	No	No	No
AWS::Connect::Rule	Yes	No	No	No
AWS::Connect::User	Yes	No	No	No
AWS::CustomerProfiles::Domain	Yes	No	No	No
AWS::CustomerProfiles::ObjectType	Yes	No	No	No
AWS::DMS::Certificate	Yes	No	Yes	No
AWS::DMS::Endpoint	Yes	No	Yes	No
AWS::DMS::EventSubscription	Yes	No	Yes	No
AWS::DMS::ReplicationInstance	Yes	No	Yes	No
AWS::DMS::ReplicationSubnetGroup	Yes	No	Yes	No
AWS::DMS::ReplicationTask	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::DataSync::LocationEFS	Yes	No	Yes	Yes
AWS::DataSync::LocationFSxLustre	Yes	No	Yes	No
AWS::DataSync::LocationFSxWindows	Yes	No	Yes	No
AWS::DataSync::LocationHDFS	Yes	No	Yes	Yes
AWS::DataSync::LocationNFS	Yes	No	Yes	Yes
AWS::DataSync::LocationObjectStorage	Yes	No	Yes	Yes
AWS::DataSync::LocationS3	Yes	Yes	Yes	Yes
AWS::DataSync::LocationSMB	Yes	No	Yes	Yes
AWS::DataSync::Task	Yes	Yes	Yes	Yes
AWS::Detective::Graph	Yes	Yes	Yes	No
AWS::DynamoDB::Table	Yes	Yes	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EC2::ClientVpnEndpoint	Yes	No	Yes	No
AWS::EC2::ClientVpnTargetNetworkAssociation	Yes	Yes	Yes	No
AWS::EC2::CustomerGateway	Yes	Yes	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes	Yes	Yes
AWS::EC2::EC2Fleet	Yes	No	Yes	Yes
AWS::EC2::EIP	Yes	Yes	Yes	Yes
AWS::EC2::EIPAssociation	Yes	Yes	Yes	Yes
AWS::EC2::EgressOnlyInternetGateway	Yes	No	Yes	Yes
AWS::EC2::FlowLog	Yes	No	Yes	Yes
AWS::EC2::Host	Yes	Yes	Yes	Yes
AWS::EC2::IPAM	Yes	No	Yes	Yes
AWS::EC2::IPAMPool	Yes	No	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EC2::IPAMResourceDiscovery	Yes	Yes	Yes	Yes
AWS::EC2::IPAMResourceDiscoveryAssociation	Yes	Yes	Yes	Yes
AWS::EC2::IPAMScope	Yes	No	Yes	Yes
AWS::EC2::Instance	Yes	Yes	Yes	Yes
AWS::EC2::InstanceConnectEndpoint	Yes	Yes	Yes	Yes
AWS::EC2::InternetGateway	Yes	Yes	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	No	Yes	No
AWS::EC2::NatGateway	Yes	No	Yes	Yes
AWS::EC2::NetworkAcl	Yes	Yes	Yes	Yes
AWS::EC2::NetworkInsightsAccessScope	Yes	No	Yes	No
AWS::EC2::NetworkInsightsAccessScopeAnalysis	Yes	No	Yes	No
AWS::EC2::NetworkInsightsAnalysis	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EC2::NetworkInsightsPath	Yes	No	Yes	No
AWS::EC2::NetworkInterface	Yes	Yes	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes	Yes	Yes
AWS::EC2::RouteTable	Yes	Yes	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes	Yes	Yes
AWS::EC2::SpotFleet	Yes	Yes	Yes	Yes
AWS::EC2::Subnet	Yes	Yes	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes	Yes	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes	Yes	Yes
AWS::EC2::TrafficMirrorSession	No	No	Yes	No
AWS::EC2::TrafficMirrorTarget	No	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EC2::TransitGateway	Yes	Yes	Yes	Yes
AWS::EC2::TransitGatewayAttachment	Yes	No	Yes	Yes
AWS::EC2::TransitGatewayConnect	Yes	No	Yes	Yes
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes	Yes	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	No	Yes	Yes
AWS::EC2::VPC	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes	Yes	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpoint	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	Yes	Yes	Yes
AWS::EC2::VPCPeeringConnection	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EC2::VPNConnection	Yes	Yes	Yes	Yes
AWS::EC2::VPNConnectionRoute	Yes	Yes	Yes	Yes
AWS::EC2::VPNGateway	Yes	Yes	Yes	Yes
AWS::EC2::Volume	Yes	Yes	Yes	Yes
AWS::ECR::PullThroughCacheRule	Yes	Yes	Yes	Yes
AWS::ECR::RegistryPolicy	Yes	Yes	Yes	Yes
AWS::ECR::Repository	Yes	Yes	Yes	Yes
AWS::ECS::CapacityProvider	Yes	Yes	Yes	Yes
AWS::ECS::Cluster	Yes	Yes	Yes	Yes
AWS::ECS::Service	Yes	Yes	Yes	Yes
AWS::ECS::TaskDefinition	Yes	Yes	Yes	Yes
AWS::ECS::TaskSet	Yes	No	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::EFS::AccessPoint	Yes	Yes	Yes	Yes
AWS::EFS::FileSystem	Yes	Yes	Yes	Yes
AWS::EKS::Addon	Yes	No	Yes	Yes
AWS::EKS::Cluster	Yes	No	Yes	Yes
AWS::EKS::FargateProfile	Yes	Yes	Yes	Yes
AWS::EKS::IdentityProviderConfig	Yes	No	Yes	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes	Yes	Yes
AWS::ElasticBeanstalk::Application	Yes	No	Yes	Yes
AWS::ElasticBeanstalk::ApplicationVersion	Yes	No	Yes	Yes
AWS::ElasticBeanstalk::Environment	Yes	No	Yes	Yes
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes	Yes	Yes
AWS::EventSchemas::Discoverer	Yes	No	Yes	Yes
AWS::EventSchemas::Registry	Yes	No	Yes	Yes
AWS::EventSchemas::RegistryPolicy	Yes	No	Yes	Yes
AWS::EventSchemas::Schema	Yes	No	Yes	Yes
AWS::Events::ApiDestination	Yes	No	Yes	Yes
AWS::Events::Archive	Yes	No	Yes	Yes
AWS::Events::Connection	Yes	No	Yes	Yes
AWS::Events::EventBus	Yes	Yes	Yes	Yes
AWS::Events::Rule	Yes	No	Yes	No
AWS::FIS::ExperimentTemplate	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Glue::Classifier	Yes	Yes	Yes	Yes
AWS::Glue::Job	Yes	Yes	Yes	Yes
AWS::Glue::MLTransform	Yes	Yes	Yes	Yes
AWS::GroundStation::Config	Yes	No	Yes	No
AWS::GroundStation ::DataflowEndpointGroup	Yes	No	Yes	No
AWS::GroundStation::MissionProfile	Yes	No	Yes	No
AWS::GuardDuty::Detector	Yes	Yes	Yes	Yes
AWS::GuardDuty::Filter	Yes	No	Yes	No
AWS::GuardDuty::IPSet	Yes	No	Yes	Yes
AWS::GuardDuty::ThreatIntelSet	Yes	Yes	Yes	Yes
AWS::IAM::Group	Yes	No	Yes	No
AWS::IAM::Policy	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::IAM::Role	Yes	No	Yes	No
AWS::IAM::User	Yes	No	Yes	No
AWS::ImageBuilder::ContainerRecipe	Yes	Yes	Yes	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes	Yes	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes	Yes	Yes
AWS::ImageBuilder::ImageRecipe	Yes	Yes	Yes	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes	Yes	Yes
AWS::InspectorV2::Activation	Yes	No	Yes	No
AWS::InspectorV2::Filter	Yes	No	Yes	No
AWS::IoT::AccountAuditConfiguration	No	No	Yes	Yes
AWS::IoT::Authorizer	No	No	Yes	Yes
AWS::IoT::CACertificate	No	No	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::IoT::CustomMetric	No	No	Yes	Yes
AWS::IoT::Dimension	No	No	Yes	Yes
AWS::IoT::FleetMetric	No	No	Yes	Yes
AWS::IoT::JobTemplate	No	No	Yes	Yes
AWS::IoT::MitigationAction	No	No	Yes	Yes
AWS::IoT::Policy	No	No	Yes	Yes
AWS::IoT::ProvisioningTemplate	No	No	Yes	Yes
AWS::IoT::RoleAlias	No	No	Yes	Yes
AWS::IoT::ScheduledAudit	No	No	Yes	Yes
AWS::IoT::SecurityProfile	No	No	Yes	Yes
AWS::KMS::Alias	Yes	No	Yes	Yes
AWS::KMS::Key	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Kinesis::Stream	Yes	No	Yes	Yes
AWS::Kinesis::StreamConsumer	Yes	Yes	Yes	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes	Yes	Yes
AWS::KinesisFirehose::DeliveryStream	Yes	Yes	Yes	Yes
AWS::Lambda::CodeSigningConfig	Yes	No	Yes	No
AWS::Lambda::Function	Yes	Yes	Yes	Yes
AWS::Lex::Bot	Yes	No	No	No
AWS::Lex::BotAlias	Yes	No	No	No
AWS::Logs::Destination	Yes	Yes	Yes	Yes
AWS::MSK::BatchScramSecret	Yes	No	Yes	Yes
AWS::MSK::Cluster	Yes	No	Yes	Yes
AWS::MSK::ClusterPolicy	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::MSK::Configuration	Yes	Yes	Yes	Yes
AWS::MSK::VpcConnection	Yes	Yes	Yes	Yes
AWS::Macie::Session	Yes	Yes	Yes	No
AWS::MediaConnect::FlowEntitlement	Yes	No	No	Yes
AWS::MediaConnect::FlowSource	Yes	No	No	Yes
AWS::MediaConnect::FlowVpcInterface	Yes	No	No	No
AWS::MediaConnect::Gateway	Yes	No	No	No
AWS::MediaTailor::PlaybackConfiguration	Yes	No	No	Yes
AWS::NetworkFirewall::Firewall	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes	Yes	Yes
AWS::NetworkFirewall::TLSInspectionConfiguration	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes	Yes	Yes
AWS::OpenSearch::Domain	Yes	No	Yes	No
AWS::RDS::DBCluster	Yes	Yes	Yes	Yes
AWS::RDS::DBClusterSnapshot	Yes	No	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes	Yes	Yes
AWS::RDS::DBSecurityGroup	Yes	Yes	Yes	Yes
AWS::RDS::DBSnapshot	Yes	Yes	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes	Yes	Yes
AWS::RDS::EventSubscription	Yes	Yes	Yes	Yes
AWS::RDS::GlobalCluster	Yes	Yes	Yes	Yes
AWS::RDS::OptionGroup	Yes	Yes	Yes	Yes
AWS::RUM::AppMonitor	No	No	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Redshift::Cluster	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes	Yes	Yes
AWS::Redshift::ClusterSubnetGroup	Yes	Yes	Yes	Yes
AWS::Redshift::EventSubscription	Yes	Yes	Yes	Yes
AWS::Redshift::ScheduledAction	No	No	Yes	No
AWS::ResilienceHub::App	Yes	No	Yes	No
AWS::ResilienceHub::ResiliencyPolicy	Yes	No	Yes	No
AWS::ResourceExplorer2::Index	No	No	Yes	Yes
AWS::Route53Profiles::Profile	Yes	Yes	Yes	Yes
AWS::Route53Resolver::FirewallDomainList	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::Route53Resolver::FirewallRuleGroup	Yes	No	Yes	No
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	No	Yes	No
AWS::Route53Resolver::ResolverEndpoint	Yes	No	Yes	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	No	Yes	No
AWS::Route53Resolver::ResolverQueryLoggingConfigAssociation	Yes	No	Yes	No
AWS::Route53Resolver::ResolverRule	Yes	No	Yes	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	No	Yes	Yes
AWS::S3::AccessPoint	Yes	Yes	Yes	Yes
AWS::S3::AccountPublicAccessBlock	Yes	No	Yes	Yes
AWS::S3::Bucket	Yes	Yes	Yes	Yes
AWS::SES::ConfigurationSet	Yes	Yes	Yes	No
AWS::SES::ContactList	Yes	Yes	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::SES::Template	Yes	Yes	Yes	No
AWS::SNS::Topic	Yes	Yes	Yes	Yes
AWS::SQS::Queue	Yes	No	Yes	No
AWS::SSM::AssociationCompliance	Yes	Yes	Yes	Yes
AWS::SSM::Document	Yes	Yes	Yes	Yes
AWS::SSM::FileData	Yes	Yes	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes	Yes	Yes
AWS::SSM::PatchCompliance	Yes	Yes	Yes	Yes
AWS::SageMaker::AppImageConfig	Yes	Yes	Yes	Yes
AWS::SageMaker::CodeRepository	Yes	No	Yes	No
AWS::SageMaker::Domain	Yes	No	Yes	No
AWS::SageMaker::EndpointConfig	Yes	No	Yes	No

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::SageMaker::FeatureGroup	Yes	Yes	Yes	No
AWS::SageMaker::Image	Yes	Yes	Yes	Yes
AWS::SageMaker::InferenceExperiment	Yes	No	Yes	No
AWS::SageMaker::Model	Yes	No	Yes	No
AWS::SageMaker::NotebookInstance	Yes	No	Yes	No
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	No	Yes	No
AWS::SecretsManager::Secret	Yes	Yes	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	No	Yes	Yes
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	No	Yes	Yes
AWS::ServiceCatalog::Portfolio	Yes	No	Yes	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::ServiceDiscovery::Instance	Yes	No	Yes	Yes
AWS::ServiceDiscovery::PublicDnsNamespace	Yes	Yes	Yes	Yes
AWS::ServiceDiscovery::Service	Yes	No	Yes	Yes
AWS::ShieldRegional::Protection	Yes	No	Yes	Yes
AWS::Signer::SigningProfile	Yes	No	Yes	No
AWS::StepFunctions::Activity	Yes	Yes	Yes	Yes
AWS::StepFunctions::StateMachine	Yes	Yes	Yes	Yes
AWS::Transfer::Agreement	Yes	No	Yes	Yes
AWS::Transfer::Certificate	Yes	Yes	Yes	Yes
AWS::Transfer::Connector	Yes	Yes	Yes	Yes
AWS::Transfer::Profile	Yes	Yes	Yes	Yes
AWS::Transfer::Workflow	Yes	Yes	Yes	Yes

Resource type	Africa (Cape Town)	Israel (Tel Aviv)	Middle East (Bahrain)	Middle East (UAE)
AWS::WAFRegional::RateBasedRule	Yes	Yes	Yes	Yes
AWS::WAFRegional::Rule	Yes	Yes	Yes	Yes
AWS::WAFRegional::RuleGroup	Yes	Yes	Yes	Yes
AWS::WAFRegional::WebACL	Yes	Yes	Yes	Yes
AWS::WAFv2::IPSet	Yes	Yes	Yes	Yes
AWS::WAFv2::ManagedRuleSet	Yes	Yes	Yes	Yes
AWS::WAFv2::RegexPatternSet	Yes	Yes	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes	Yes	Yes
AWS::WorkSpaces::Workspace	Yes	No	No	No
AWS::XRay::EncryptionConfig	Yes	Yes	No	Yes

GovCloud Regions

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::ACM::Certificate	Yes	Yes
AWS::ACMPCA::CertificateAuthority	Yes	Yes
AWS::ACMPCA::CertificateAuthorityActivation	Yes	Yes
AWS::AccessAnalyzer::Analyzer	Yes	Yes
AWS::AmazonMQ::Broker	Yes	Yes
AWS::ApiGateway::RestApi	Yes	Yes
AWS::ApiGateway::Stage	Yes	Yes
AWS::ApiGatewayV2::Api	Yes	Yes
AWS::ApiGatewayV2::Stage	Yes	Yes
AWS::AppConfig::Application	Yes	Yes
AWS::AppConfig::ConfigurationProfile	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::AppConfig::DeploymentStrategy	Yes	Yes
AWS::AppConfig::Environment	Yes	Yes
AWS::AppConfig::ExtensionAssociation	Yes	Yes
AWS::AppConfig::HostedConfigurationVersion	Yes	Yes
AWS::AppStream::Application	Yes	Yes
AWS::AppStream::DirectoryConfig	Yes	No
AWS::AppStream::Fleet	Yes	No
AWS::AppStream::Stack	Yes	No
AWS::Athena::DataCatalog	Yes	Yes
AWS::Athena::WorkGroup	Yes	Yes
AWS::AutoScaling::AutoScalingGroup	Yes	Yes
AWS::AutoScaling::LaunchConfiguration	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::AutoScaling::ScalingPolicy	Yes	Yes
AWS::AutoScaling::ScheduledAction	Yes	Yes
AWS::AutoScaling::WarmPool	Yes	Yes
AWS::Backup::BackupPlan	Yes	Yes
AWS::Backup::BackupSelection	Yes	Yes
AWS::Backup::BackupVault	Yes	Yes
AWS::Backup::RecoveryPoint	Yes	Yes
AWS::Batch::ComputeEnvironment	Yes	Yes
AWS::Batch::JobQueue	Yes	Yes
AWS::Batch::SchedulingPolicy	Yes	Yes
AWS::Cassandra::Keyspace	Yes	Yes
AWS::CloudFormation::Stack	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::CloudTrail::Trail	Yes	Yes
AWS::CloudWatch::Alarm	Yes	Yes
AWS::CodeBuild::Project	Yes	Yes
AWS::CodeBuild::ReportGroup	Yes	Yes
AWS::Cognito::IdentityPool	Yes	No
AWS::Cognito::UserPoolGroup	Yes	No
AWS::Config::ConfigurationRecorder	Yes	Yes
AWS::Config::ConformancePackCompliance	Yes	Yes
AWS::Config::ResourceCompliance	Yes	Yes
AWS::Connect::Instance	Yes	No
AWS::Connect::QuickConnect	Yes	No
AWS::Connect::User	Yes	No

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::DMS::Certificate	Yes	Yes
AWS::DMS::Endpoint	Yes	Yes
AWS::DMS::EventSubscription	Yes	Yes
AWS::DMS::ReplicationInstance	Yes	Yes
AWS::DMS::ReplicationSubnetGroup	Yes	Yes
AWS::DMS::ReplicationTask	Yes	Yes
AWS::DataSync::LocationEFS	Yes	Yes
AWS::DataSync::LocationFSxLustre	Yes	Yes
AWS::DataSync::LocationFSxWindows	Yes	Yes
AWS::DataSync::LocationHDFS	Yes	Yes
AWS::DataSync::LocationNFS	Yes	Yes
AWS::DataSync::LocationObjectStorage	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::DataSync::LocationS3	Yes	Yes
AWS::DataSync::LocationSMB	Yes	Yes
AWS::DataSync::Task	Yes	Yes
AWS::Detective::Graph	Yes	Yes
AWS::DynamoDB::Table	Yes	Yes
AWS::EC2::CapacityReservation	Yes	Yes
AWS::EC2::ClientVpnEndpoint	Yes	Yes
AWS::EC2::ClientVpnTargetNetworkAssociation	Yes	Yes
AWS::EC2::CustomerGateway	Yes	Yes
AWS::EC2::DHCPOptions	Yes	Yes
AWS::EC2::EC2Fleet	Yes	Yes
AWS::EC2::EIP	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::EC2::EgressOnlyInternetGateway	Yes	Yes
AWS::EC2::FlowLog	Yes	Yes
AWS::EC2::Host	Yes	Yes
AWS::EC2::IPAM	Yes	Yes
AWS::EC2::IPAMPool	Yes	Yes
AWS::EC2::IPAMResourceDiscovery	Yes	Yes
AWS::EC2::IPAMResourceDiscoveryAssociation	Yes	Yes
AWS::EC2::IPAMScope	Yes	Yes
AWS::EC2::Instance	Yes	Yes
AWS::EC2::InstanceConnectEndpoint	Yes	Yes
AWS::EC2::InternetGateway	Yes	Yes
AWS::EC2::LaunchTemplate	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::EC2::NatGateway	Yes	Yes
AWS::EC2::NetworkAcl	Yes	Yes
AWS::EC2::NetworkInterface	Yes	Yes
AWS::EC2::PrefixList	Yes	Yes
AWS::EC2::RouteTable	Yes	Yes
AWS::EC2::SecurityGroup	Yes	Yes
AWS::EC2::SnapshotBlockPublicAccess	Yes	Yes
AWS::EC2::SpotFleet	Yes	Yes
AWS::EC2::Subnet	Yes	Yes
AWS::EC2::SubnetRouteTableAssociation	Yes	Yes
AWS::EC2::TrafficMirrorFilter	Yes	Yes
AWS::EC2::TrafficMirrorSession	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::EC2::TrafficMirrorTarget	Yes	Yes
AWS::EC2::TransitGateway	Yes	No
AWS::EC2::TransitGatewayAttachment	Yes	Yes
AWS::EC2::TransitGatewayConnect	Yes	Yes
AWS::EC2::TransitGatewayMulticastDomain	Yes	Yes
AWS::EC2::TransitGatewayRouteTable	Yes	Yes
AWS::EC2::VPC	Yes	Yes
AWS::EC2::VPCBlockPublicAccessExclusion	Yes	Yes
AWS::EC2::VPCBlockPublicAccessOptions	Yes	Yes
AWS::EC2::VPCEndpoint	Yes	Yes
AWS::EC2::VPCEndpointConnectionNotification	Yes	Yes
AWS::EC2::VPCEndpointService	Yes	No

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::EC2::VPCPeeringConnection	Yes	Yes
AWS::EC2::VPNConnection	Yes	Yes
AWS::EC2::VPNConnectionRoute	Yes	Yes
AWS::EC2::VPNGateway	Yes	Yes
AWS::EC2::Volume	Yes	Yes
AWS::ECR::Repository	Yes	Yes
AWS::ECS::CapacityProvider	Yes	Yes
AWS::ECS::Cluster	Yes	Yes
AWS::ECS::Service	Yes	Yes
AWS::ECS::TaskDefinition	Yes	Yes
AWS::ECS::TaskSet	Yes	Yes
AWS::EFS::AccessPoint	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::EFS::FileSystem	Yes	Yes
AWS::EKS::Addon	Yes	Yes
AWS::EKS::Cluster	Yes	Yes
AWS::EKS::IdentityProviderConfig	Yes	Yes
AWS::EMR::SecurityConfiguration	Yes	Yes
AWS::ElasticBeanstalk::Application	Yes	Yes
AWS::ElasticBeanstalk::ApplicationVersion	Yes	Yes
AWS::ElasticBeanstalk::Environment	Yes	Yes
AWS::ElasticLoadBalancing::LoadBalancer	Yes	Yes
AWS::ElasticLoadBalancingV2::Listener	Yes	Yes
AWS::ElasticLoadBalancingV2::LoadBalancer	Yes	Yes
AWS::Elasticsearch::Domain	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::Events::EventBus	Yes	Yes
AWS::Events::Rule	Yes	Yes
AWS::FIS::ExperimentTemplate	Yes	Yes
AWS::Glue::Classifier	Yes	Yes
AWS::Glue::Job	Yes	Yes
AWS::Glue::MLTransform	Yes	No
AWS::GreengrassV2::ComponentVersion	Yes	Yes
AWS::GuardDuty::Detector	Yes	Yes
AWS::GuardDuty::Filter	Yes	Yes
AWS::GuardDuty::IPSet	Yes	Yes
AWS::GuardDuty::ThreatIntelSet	Yes	Yes
AWS::IAM::Group	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::IAM::InstanceProfile	No	Yes
AWS::IAM::OIDCProvider	No	Yes
AWS::IAM::Policy	Yes	Yes
AWS::IAM::Role	Yes	Yes
AWS::IAM::SAMLProvider	No	Yes
AWS::IAM::ServerCertificate	No	Yes
AWS::IAM::User	Yes	Yes
AWS::ImageBuilder::ContainerRecipe	Yes	Yes
AWS::ImageBuilder::DistributionConfiguration	Yes	Yes
AWS::ImageBuilder::ImagePipeline	Yes	Yes
AWS::ImageBuilder::ImageRecipe	Yes	Yes
AWS::ImageBuilder::InfrastructureConfiguration	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::InspectorV2::Activation	Yes	Yes
AWS::IoT::AccountAuditConfiguration	Yes	Yes
AWS::IoT::Authorizer	Yes	Yes
AWS::IoT::CACertificate	Yes	Yes
AWS::IoT::CustomMetric	Yes	Yes
AWS::IoT::Dimension	Yes	Yes
AWS::IoT::FleetMetric	Yes	Yes
AWS::IoT::JobTemplate	Yes	Yes
AWS::IoT::MitigationAction	Yes	Yes
AWS::IoT::Policy	Yes	Yes
AWS::IoT::ProvisioningTemplate	Yes	Yes
AWS::IoT::RoleAlias	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::IoT::ScheduledAudit	Yes	Yes
AWS::IoT::SecurityProfile	Yes	Yes
AWS::IoTEvents::AlarmModel	Yes	No
AWS::IoTEvents::DetectorModel	Yes	No
AWS::IoTEvents::Input	Yes	No
AWS::IoTSiteWise::AssetModel	Yes	No
AWS::IoTSiteWise::Gateway	Yes	No
AWS::IoTSiteWise::Portal	Yes	No
AWS::IoTTwinMaker::ComponentType	Yes	No
AWS::IoTTwinMaker::Entity	Yes	No
AWS::IoTTwinMaker::Workspace	Yes	No
AWS::KMS::Alias	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::KMS::Key	Yes	Yes
AWS::Kinesis::Stream	Yes	Yes
AWS::Kinesis::StreamConsumer	Yes	Yes
AWS::KinesisAnalyticsV2::Application	Yes	Yes
AWS::KinesisFirehose::DeliveryStream	Yes	Yes
AWS::Lambda::Function	Yes	Yes
AWS::Logs::Destination	Yes	Yes
AWS::MSK::BatchScramSecret	Yes	Yes
AWS::MSK::Cluster	Yes	Yes
AWS::MSK::ClusterPolicy	Yes	Yes
AWS::MSK::Configuration	Yes	Yes
AWS::MSK::VpcConnection	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::NetworkFirewall::Firewall	Yes	Yes
AWS::NetworkFirewall::FirewallPolicy	Yes	Yes
AWS::NetworkFirewall::RuleGroup	Yes	Yes
AWS::NetworkFirewall::VpcEndpointAssociation	Yes	Yes
AWS::NetworkManager::CustomerGatewayAssociation	Yes	No
AWS::NetworkManager::Device	Yes	No
AWS::NetworkManager::GlobalNetwork	Yes	No
AWS::NetworkManager::Link	Yes	No
AWS::NetworkManager::LinkAssociation	Yes	No
AWS::NetworkManager::Site	Yes	No
AWS::NetworkManager::TransitGatewayRegistration	Yes	No
AWS::OpenSearch::Domain	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::Pinpoint::App	Yes	No
AWS::Pinpoint::ApplicationSettings	Yes	No
AWS::Pinpoint::Campaign	Yes	No
AWS::Pinpoint::EmailChannel	Yes	No
AWS::Pinpoint::EmailTemplate	Yes	No
AWS::Pinpoint::EventStream	Yes	No
AWS::Pinpoint::InAppTemplate	Yes	No
AWS::Pinpoint::Segment	Yes	No
AWS::QuickSight::Template	Yes	No
AWS::RDS::DBCluster	Yes	Yes
AWS::RDS::DBClusterSnapshot	Yes	Yes
AWS::RDS::DBInstance	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::RDS::DBSecurityGroup	Yes	Yes
AWS::RDS::DBSnapshot	Yes	Yes
AWS::RDS::DBSubnetGroup	Yes	Yes
AWS::RDS::EventSubscription	Yes	Yes
AWS::RDS::OptionGroup	Yes	Yes
AWS::Redshift::Cluster	Yes	Yes
AWS::Redshift::ClusterParameterGroup	Yes	Yes
AWS::Redshift::ClusterSecurityGroup	Yes	Yes
AWS::Redshift::ClusterSnapshot	Yes	Yes
AWS::Redshift::ClusterSubnetGroup	Yes	Yes
AWS::Redshift::EventSubscription	Yes	Yes
AWS::Redshift::ScheduledAction	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::RoboMaker::RobotApplication	Yes	No
AWS::RoboMaker::RobotApplicationVersion	Yes	No
AWS::RoboMaker::SimulationApplication	Yes	No
AWS::Route53Profiles::Profile	Yes	Yes
AWS::Route53Resolver::FirewallDomainList	Yes	Yes
AWS::Route53Resolver::FirewallRuleGroup	Yes	Yes
AWS::Route53Resolver::FirewallRuleGroupAssociation	Yes	Yes
AWS::Route53Resolver::ResolverEndpoint	Yes	Yes
AWS::Route53Resolver::ResolverQueryLoggingConfig	Yes	Yes
AWS::Route53Resolver::Resol verQueryLoggingConfigAssociation	Yes	Yes
AWS::Route53Resolver::ResolverRule	Yes	Yes
AWS::Route53Resolver::ResolverRuleAssociation	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::S3::AccessPoint	Yes	Yes
AWS::S3::AccountPublicAccessBlock	Yes	Yes
AWS::S3::Bucket	Yes	Yes
AWS::SES::ConfigurationSet	Yes	No
AWS::SES::ContactList	Yes	No
AWS::SES::Template	Yes	No
AWS::SNS::Topic	Yes	Yes
AWS::SQS::Queue	Yes	Yes
AWS::SSM::AssociationCompliance	Yes	Yes
AWS::SSM::Document	Yes	Yes
AWS::SSM::FileData	Yes	Yes
AWS::SSM::ManagedInstanceInventory	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::SSM::PatchCompliance	Yes	Yes
AWS::SageMaker::Model	Yes	No
AWS::SageMaker::NotebookInstance	Yes	No
AWS::SageMaker::NotebookInstanceLifecycleConfig	Yes	No
AWS::SecretsManager::Secret	Yes	Yes
AWS::SecurityHub::Standard	Yes	Yes
AWS::ServiceCatalog::CloudFormationProduct	Yes	Yes
AWS::ServiceCatalog::CloudFormationProvisionedProduct	Yes	Yes
AWS::ServiceCatalog::Portfolio	Yes	Yes
AWS::ServiceDiscovery::HttpNamespace	Yes	Yes
AWS::ServiceDiscovery::Instance	Yes	Yes
AWS::ServiceDiscovery::Service	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::StepFunctions::StateMachine	Yes	Yes
AWS::Transfer::Agreement	Yes	Yes
AWS::Transfer::Certificate	Yes	Yes
AWS::Transfer::Connector	Yes	Yes
AWS::Transfer::Profile	Yes	Yes
AWS::Transfer::Workflow	Yes	Yes
AWS::WAFRegional::RateBasedRule	Yes	Yes
AWS::WAFRegional::Rule	Yes	Yes
AWS::WAFRegional::RuleGroup	Yes	Yes
AWS::WAFRegional::WebACL	Yes	Yes
AWS::WAFv2::IPSet	Yes	Yes
AWS::WAFv2::ManagedRuleSet	Yes	Yes

Resource type	AWS GovCloud (US-West)	AWS GovCloud (US-East)
AWS::WAFv2::RegexPatternSet	Yes	Yes
AWS::WAFv2::RuleGroup	Yes	Yes
AWS::WAFv2::WebACL	Yes	Yes
AWS::WorkSpaces::Workspace	Yes	No

Recording AWS Resources with AWS Config

AWS Config continuously detects when supported resource types are created, changed, or deleted. AWS Config records these events as configuration items (CIs).

You can customize AWS Config to record configuration changes for all supported resource types, or for only the supported resource types that are relevant to you. For a list of supported resource types that AWS Config can record, see Supported Resource Types for AWS Config.

Topics

- Considerations
- What are the differences between Regional and global resources?
- AWS Config Rules and global resource types
- Recording frequency for AWS Config
- Non-recorded resources
- Recording resources in the AWS Config console
- Recording resources with the AWS CLI
- Excluding resources from recording with AWS Config
- Stopping AWS Config from recording with the customer managed configuration recorder

Considerations

High Number of AWS Config Evaluations

You might notice increased activity in your account during your initial month recording with AWS Config when compared to subsequent months. During the initial bootstrapping process, AWS Config runs evaluations on all the resources in your account that you have selected for AWS Config to record.

If you are running ephemeral workloads, you may see increased activity from AWS Config as it records configuration changes associated with creating and deleting these temporary resources. An *ephemeral workload* is a temporary use of computing resources that are loaded and run when needed. Examples include Amazon Elastic Compute Cloud (Amazon EC2) Spot Instances, Amazon EMR jobs, and AWS Auto Scaling.

If you want to avoid the increased activity from running ephemeral workloads, you can set up the customer managed configuration recorder to exclude these resource types from being recorded, or run these types of workloads in a separate account with AWS Config turned off to avoid increased configuration recording and rule evaluations.

Region availability

Before specifying a resource type for AWS Config to track, check Resource Coverage by Region availability to see if the resource type is supported in the AWS Region where you set up AWS Config.

If a resource type is supported by AWS Config in at least one Region, you can enable the recording of that resource type in all Regions supported by AWS Config, even if the specified resource type is not supported in the AWS Region where you set up AWS Config.

What are the differences between Regional and global resources?

Regional resources

Regional resources are tied to a Region and can be used only in that Region. You create them in a specified AWS Region, and then they exist in that Region. To see or interact with those resources, you must direct your operations to that Region. For example, to create an Amazon EC2 instance with the AWS Management Console, you choose the AWS Region that you want to create the instance in. If you use the AWS Command Line Interface (AWS CLI) to create

the instance, then you include the `--region` parameter. The AWS SDKs each have their own equivalent mechanism to specify the Region that the operation uses.

There are several reasons for using Regional resources. One reason is to ensure that the resources, and the service endpoints that you use to access them, are as close to the customer as possible. This improves performance by minimizing latency. Another reason is to provide an isolation boundary. This lets you create independent copies of resources in multiple Regions to distribute the load and improve scalability. At the same time, it isolates the resources from each other to improve availability.

If you specify a different AWS Region in the console or in an AWS CLI command, then you can no longer see or interact with the resources you could see in the previous Region.

When you look at the Amazon Resource Name (ARN) for a Regional resource, the Region that contains the resource is specified as the fourth field in the ARN. For example, an Amazon EC2 instance is a Regional resource. The following is an example of an ARN for a Amazon EC2 instance that exists in the `us-east-1` Region.

```
arn:aws:ec2:us-east-1:123456789012:instance/i-0a6f30921424d3eee
```

Global resources

Some AWS services resources are *global resources*, meaning that you can use the resource from ***anywhere***. You don't specify an AWS Region in a global service's console. To access a global resource, you don't specify a `--region` parameter when using the service's AWS CLI and AWS SDK operations.

Global resources support cases where it is critical that only one instance of a particular resource can exist at a time. In these scenarios, replication or synchronization between copies in different Regions is not adequate. Having to access a single global endpoint, with the possible increase in latency, is considered acceptable to ensure that any changes are instantaneously visible to consumers of the resource.

For example, Amazon Aurora global clusters (`AWS::RDS::GlobalCluster`) are global resources, and therefore not tied to a Region. This means that you can create a global cluster without relying on a regional endpoint. The benefit is that, while the Amazon Relational Database Service (Amazon RDS) itself is organized by Regions, the specific Region where a global cluster originates doesn't impact the global cluster. It appears as a single, continuous global cluster across all Regions.

The Amazon Resource Name (ARN) for a global resource doesn't include a Region. The fourth field is empty, such as in the following example of an ARN for a global cluster.

```
arn:aws:rds::123456789012:global-cluster:test-global-cluster
```

Important

Global resource types onboarded to AWS Config after February 2022 will only be recorded in the service's home Region for the commercial partition and AWS GovCloud (US-West) for the GovCloud partition. You can view the configuration items (CIs) for these new global resource types only in their home Region and AWS GovCloud (US-West).

Global resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) remain unchanged. You can enable the recording of these global IAM resources in all Regions where AWS Config was supported before February 2022. These global IAM resources cannot be recorded in Regions supported by AWS Config after February 2022.

Global resource types | IAM resources

The following IAM resource types are global resources: IAM users, groups, roles, and customer managed policies. These resource types can be recorded by AWS Config in Regions where AWS Config was available before February 2022. This list where you cannot record the global IAM resource types includes the following Regions: Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Asia Pacific (Thailand), Canada West (Calgary), Europe (Spain), Europe (Zurich), Israel (Tel Aviv), Mexico (Central), and Middle East (UAE).

To prevent duplicate configuration items (CIs), you should consider only recording the global IAM resource types one time in one of the supported Regions. This can also help you avoid unneccessary evaluations and API throttling.

Global resource types | Home Region Only

Global resources for the following services are only recorded by AWS Config in the home Region of the global resource type: Amazon Elastic Container Registry Public, AWS Global Accelerator, Amazon Route 53, Amazon CloudFront, and AWS WAF. For these global resources, the same instance of the resource type can be used in multiple AWS Regions,

but the configuration items (CIs) are only recorded in the home Region for the commercial partition or AWS GovCloud (US-West) for the AWS GovCloud (US) partition.

Home Regions for Global Resource Types

AWS Service	Resource Type Value	Home Region
Amazon Elastic Container Registry Public	`AWS::ECR::PublicRepository`	US East (N. Virginia) Region
AWS Global Accelerator	`AWS::GlobalAccelerator::Listener`	US West (Oregon) Region
	`AWS::GlobalAccelerator::EndpointGroup`	US West (Oregon) Region
	`AWS::GlobalAccelerator::Accelerator`	US West (Oregon) Region
Amazon Route 53	`AWS::Route53::HostedZone`	US East (N. Virginia) Region
	`AWS::Route53::HealthCheck`	US East (N. Virginia) Region
Amazon CloudFront	`AWS::CloudFront::Distribution`	US East (N. Virginia) Region
AWS WAF	`AWS::WAFv2::WebACL`	US East (N. Virginia) Region

Global resource types | Aurora global clusters

`AWS::RDS::GlobalCluster` is a global resource that is recorded in all supported AWS Config Regions where the customer managed configuration recorder is enabled. This global resource type is unique in that if you enable the recording of this resource in one Region, AWS Config will record configuration items (CIs) for this resource type in all your enabled Regions.

If you do not want to record `AWS::RDS::GlobalCluster` in all enabled Regions, use one of the following recording strategies for the AWS Config console:

- **Record all resource types with customizable overrides**, choose "AWS RDS GlobalCluster", and choose the override "Exclude from recording"
- **Record specific resource types**.

If you do not want to record `AWS::RDS::GlobalCluster` in all enabled Regions, use one of the following recording strategies for the API/CLI:

- **Record all current and future resource types with exclusions** (`EXCLUSION_BY_RESOURCE_TYPES`)
- **Record specific resource types** (`INCLUSION_BY_RESOURCE_TYPES`).

AWS Config Rules and global resource types

The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in Regions where AWS Config was available before February 2022. These global IAM resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.

If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.

Best Practices for reporting compliance on global resources onboarded before February 2022

To avoid unnecessary evaluations, you should only deploy AWS Config rules and conformance packs that have these global resources in scope to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability. This applies to AWS Config rules, organizational AWS Config rules, and also rules created by other AWS services, such as AWS Security Hub and AWS Control Tower.

If you are not recording global resource types onboarded before February 2022, it is recommended that you do not enable the following periodic rules to avoid unnecessary evaluations:

- access-keys-rotated
- account-part-of-organizations

- iam-password-policy
- iam-policy-in-use
- iam-root-access-key-check
- iam-user-mfa-enabled
- iam-user-unused-credentials-check
- mfa-enabled-for-iam-console-access
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled

Best Practices for reporting compliance on global resources onboarded after February 2022

Global resource types onboarded to AWS Config recording after February 2022 will be recorded only in the service's home Region for the commercial partition and AWS GovCloud (US-West) for the AWS GovCloud (US) partition. You should deploy AWS Config rules and conformance packs that have these global resources in scope only to the resource type's home Region. For more information, see Home Regions for Global Resource Types.

Recording frequency for AWS Config

AWS Config supports *Continuous recording* and *Daily recording*. Continuous recording allows you to record configuration changes continuously whenever a change occurs. Daily recording allows you to receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it’s different from the previous CI recorded. For steps on how to change the recording frequency, see Changing Recording Frequency.

Continuous recording

Some benefits of continuous recording include:

- **Real-time Monitoring**: Continuous recording can provide immediate detection for unauthorized changes or unexpected alterations, which can enhance your security and compliance efforts.
- **Detailed Analysis**: Continuous recording can allow you to perfom in-depth analysis of configuration changes to your resources as they occur, which can allow you to identify patterns and trends in the moment.

Daily recording

Some benefits of daily recording include:

- **Minimal Disruption**: Daily recording can provide you with a more mangeable flow of information, which can reduce the frequency of notifications and alert fatigue.
- **Cost Efficiency**: Daily recording can provide you with the flexibility to record changes to your resources at at a lower frequency, which can reduce costs related to the number of configuration changes recorded.

> **Note**
>
> AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

Non-recorded resources

If a resource is not recorded, AWS Config captures only the creation and deletion of that resource, and no other details, at no cost to you. When a non-recorded resource is created or deleted, AWS Config sends a notification, and it displays the event on the resource details page. The details page for a non-recorded resource provides null values for most configuration details, and it does not provide information about relationships and configuration changes.

The relationship information that AWS Config provides for recorded resources is not limited because of missing data for non-recorded resources. If a recorded resource is related to a non-recorded resource, that relationship is provided in the details page of the recorded resource.

IAM resource type considerations

The `AWS::IAM::User`, `AWS::IAM::Policy`, `AWS::IAM::Group`, `AWS::IAM::Role` resource types will only capture the creation (`ResourceNotRecorded`) and deletion (`ResourceDeletedNotRecorded`) states if the resource is, or previously was, selected as a resource to record in the customer managed configuration recorder .

CI recording schedule for non-recorded resources

The configuration items (CIs) for `ResourceNotRecorded` and `ResourceDeletedNotRecorded` do not follow the typical recording time for resource types. These resource types are only recorded

during the periodic baselining process for the customer managed configuration recorder, which is at a less frequent cadance than that for the other resource types. This means that create and delete notifications are not sent upon creation or deletion, but during the baselining process.

CI delivery and service-linked recorder scope

For service-linked configuration recorders, the recording scope determines if you receive configuration items (CIs) in the delivery channel. The recording scope is set by the service that is linked to the configuration recorder. If the recording scope is internal, you will not receive CIs in the delivery channel.

Recording resources in the AWS Config console

You can use the AWS Config console to select the types of resources that AWS Config records with the customer managed configuration recorder.

To select resources

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the left navigation pane.
3. On the **Customer managed recorder** tab, choose **Edit**.
4. In the **Recording method** section, choose a recording strategy. You can specify the AWS resources that you want AWS Config to record.

   All resource types with customizable overrides

   Set up AWS Config to record configuration changes for all current and future supported resource types in this Region. You can override the recording frequency for specific resource types or exclude specific resource types from recording. For more information, see Supported Resource Types.

   - **Default settings**

     Configure the default recording frequency for all current and future supported resource types. For more information see, Recording Frequency.

     - Continuous recording – AWS Config will record configuration changes continuously whenever a change occurs.

- Daily recording – You will receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded.

> **Note**
>
> AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

- **Override settings**

  Override the recording frequency for specific resource types, or exclude specific resource types from recording. If you change the recording frequency for a resource type or stop recording a resource type, the configuration items that were already recorded will remain unchanged.

Specific resource types

Set up AWS Config to record configuration changes for only the resource types that you specify.

- **Specific resource types**

  Choose a resource type to record and its frequency. For more information see, Recording Frequency.

  - Continuous recording – AWS Config will record configuration changes continuously whenever a change occurs.
  - Daily recording – You will receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded.

> **Note**
>
> AWS Firewall Manager depends on continuous recording to monitor your resources. If you are using Firewall Manager, it is recommended that you set the recording frequency to Continuous.

If you change the recording frequency for a resource type or stop recording a resource type, the configuration items that were already recorded will remain unchanged.

5. Choose **Save** to save your changes.

Considerations When Recording Resources

High Number of AWS Config Evaluations

You might notice increased activity in your account during your initial month recording with AWS Config when compared to subsequent months. During the initial bootstrapping process, AWS Config runs evaluations on all the resources in your account that you have selected for AWS Config to record.

If you are running ephemeral workloads, you may see increased activity from AWS Config as it records configuration changes associated with creating and deleting these temporary resources. An *ephemeral workload* is a temporary use of computing resources that are loaded and run when needed. Examples include Amazon Elastic Compute Cloud (Amazon EC2) Spot Instances, Amazon EMR jobs, and AWS Auto Scaling. . If you want to avoid the increased activity from running ephemeral workloads, you can set up the customer managed configuration recorder to exclude these resource types from being recorded, or run these types of workloads in a separate account with AWS Config turned off to avoid increased configuration recording and rule evaluations.

Considerations: All resource types with customizable overrides

Globally recorded resource types | Aurora global clusters are initially included in recording

The `AWS::RDS::GlobalCluster` resource type will be recorded in all supported AWS Config Regions where the customer managed configuration recorder is enabled.

If you do not want to record `AWS::RDS::GlobalCluster` in all enabled Regions, choose "AWS RDS GlobalCluster", and choose the override "Exclude from recording".

Global resource types | IAM resource types are initially excluded from recording

The global IAM resource types are initially excluded from recording to help you reduce costs. This bundle includes IAM users, groups, roles, and customer managed policies. Choose **Remove** to remove the override and include these resources in your recording.

Additionally, the global IAM resource types (`AWS::IAM::User`, `AWS::IAM::Group`, `AWS::IAM::Role`, and `AWS::IAM::Policy`) cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.

Limits

You can add up to 100 frequency overrides and 600 exclusion overrides.

Daily recording is not supported for the following resource types:

- `AWS::Config::ResourceCompliance`
- `AWS::Config::ConformancePackCompliance`
- `AWS::Config::ConfigurationRecorder`

Considerations: Specific resource types

Region Availability

Before specifying a resource type for AWS Config to track, check Resource Coverage by Region Availability to see if the resource type is supported in the AWS Region where you set up AWS Config. If a resource type is supported by AWS Config in at least one Region, you can enable the recording of that resource type in all Regions supported by AWS Config, even if the specified resource type is not supported in the AWS Region where you set up AWS Config.

Limits

No limits if all resource types have the same frequency. You can add up to 100 resource types with Daily frequency if at least one resource type is set to Continuous.

The Daily frequency is not supported for the following resource types:

- `AWS::Config::ResourceCompliance`
- `AWS::Config::ConformancePackCompliance`
- `AWS::Config::ConfigurationRecorder`

Recording resources with the AWS CLI

You can use the AWS CLI to select the types of resources that you want AWS Config to record. You do this by creating a customer managed configuration recorder, which records the types of resources that you specify in a recording group. In the recording group, you specify whether you want to record all supported resource types, or to include or exclude specific types of resources.

Record all current and future supported resource types

Set up AWS Config to record configuration changes for all current and future supported resource types in this Region. For a list of supported resources types, see Supported Resource Types.

1. Use the `put-configuration-recorder` command:

   This command uses the `--configuration-recorder` and `---recording-group` fields.

```
$ aws configservice put-configuration-recorder \
--configuration-recorder file://configurationRecorder.json \
--recording-group file://recordingGroup.json
```

The `configuration-recorder` field

The `configurationRecorder.json` file specifies `name` and `roleArn` as well as the default recording frequency for the configuration recorder (`recordingMode`).

```
{
  "name": "default",
  "roleARN": "arn:aws:iam::123456789012:role/config-role",
  "recordingMode": {
    "recordingFrequency": CONTINUOUS or DAILY,
    "recordingModeOverrides": [
        {
            "description": "Description you provide for the override",
            "recordingFrequency": CONTINUOUS or DAILY,
            "resourceTypes": [ Comma-separated list of resource types to include
 in the override ]
        }
    ]
  }
}
```

The `recording-group` field

The `recordingGroup.json` file specifies which resource types are recorded.

```
{
    "allSupported": true,
    "recordingStrategy": {
        "useOnly": "ALL_SUPPORTED_RESOURCE_TYPES"
    },
    "includeGlobalResourceTypes": true
}
```

For more information about these fields, see `put-configuration-recorder` in the *AWS CLI Command Reference*.

2. (Optional) To verify that your customer managed configuration recorder has the settings that you want, use the following `describe-configuration-recorders` command.

```
$ aws configservice describe-configuration-recorders
```

The following is an example response.

```
{
    "ConfigurationRecorders": [
        {
            "name": "default"
            "recordingGroup": {
                "allSupported": true,
                "exclusionByResourceTypes": {
                     "resourceTypes": []
                },
                "includeGlobalResourceTypes": true,
                "recordingStrategy": {
                    "useOnly": "ALL_SUPPORTED_RESOURCE_TYPES"
                },
                "resourceTypes": [],
            },
            "recordingMode": {
                "recordingFrequency": CONTINUOUS or DAILY,
                "recordingModeOverrides": [
                 {
```

```
                        "description": "Description you provide for the override,
                        "recordingFrequency": CONTINUOUS or DAILY,
                        "resourceTypes": [ Comma-separated list of resource types
 to include in the override]
                    }
                ]
            },
            "roleARN": "arn:aws:iam::123456789012:role/config-role"
        }
    ]
}
```

Record all current and future supported resources types excluding the types you specify

Set up AWS Config to record configuration changes for all current and future supported resource types, including global resource types, except the resource types that you specify to exclude from recording.

If you choose to stop recording for a resource type, the configuration items that were already recorded will remain unchanged. For a list of supported resources types, see Supported Resource Types.

1. Use the `put-configuration-recorder` command:

   This command uses the `--configuration-recorder` and `---recording-group` fields.

   ```
   $ aws configservice put-configuration-recorder \
   --configuration-recorder file://configurationRecorder.json \
   --recording-group file://recordingGroup.json
   ```

   The `configuration-recorder` field

   The `configurationRecorder.json` file specifies `name` and `roleArn` as well as the default recording frequency for the configuration recorder (`recordingMode`).

   ```
   {
     "name": "default",
     "roleARN": "arn:aws:iam::123456789012:role/config-role",
     "recordingMode": {
       "recordingFrequency": CONTINUOUS or DAILY,
       "recordingModeOverrides": [
   ```

```
        {
            "description": "Description you provide for the override",
            "recordingFrequency": CONTINUOUS or DAILY,
            "resourceTypes": [ Comma-separated list of resource types to include
 in the override ]
        }
    ]
  }
}
```

The `recording-group` field

The `recordingGroup.json` file specifies which types of resources AWS Config will record. Pass one or more resource types to exclude in the `resourceTypes` field of `exclusionByResourceTypes`, as shown in the following example.

```
{
    "allSupported": false,
    "exclusionByResourceTypes": {
        "resourceTypes": [
            "AWS::Redshift::ClusterSnapshot",
            "AWS::RDS::DBClusterSnapshot",
            "AWS::CloudFront::StreamingDistribution"
        ]
    },
   "includeGlobalResourceTypes": false,
   "recordingStrategy": {
       "useOnly": "EXCLUSION_BY_RESOURCE_TYPES"
    },

}
```

For more information about these fields, see `put-configuration-recorder` in the *AWS CLI Command Reference*.

2. (Optional) To verify that your customer managed configuration recorder has the settings that you want, use the following `describe-configuration-recorders` command.

```
$ aws configservice describe-configuration-recorders
```

The following is an example response.

```
{
    "ConfigurationRecorders": [
        {
            "name": "default",
            "recordingGroup": {
                "allSupported": false,
                "exclusionByResourceTypes": {
                    "resourceTypes": [
                        "AWS::Redshift::ClusterSnapshot",
                        "AWS::RDS::DBClusterSnapshot",
                        "AWS::CloudFront::StreamingDistribution"
                    ]
                },
                "includeGlobalResourceTypes": false,
                "recordingStrategy": {
                    "useOnly": "EXCLUSION_BY_RESOURCE_TYPES"
                },
                "resourceTypes": [],
            },
            "recordingMode": {
                "recordingFrequency": CONTINUOUS or DAILY,
                "recordingModeOverrides": [
                 {
                     "description": "Description you provide for the override,
                     "recordingFrequency": CONTINUOUS or DAILY,
                     "resourceTypes": [ Comma-separated list of resource types to
 include in the override]
                }
              ]
            },
            "roleARN": "arn:aws:iam::123456789012:role/config-role"
        }
    ]
}
```

Record specific resource types

Set up AWS Config to record configuration changes for only the resource types that you specify.

If you choose to stop recording for a resource type, the configuration items that were already recorded will remain unchanged. For a list of supported resources types, see Supported Resource Types.

1. Use the `put-configuration-recorder` command:

   This command uses the `--configuration-recorder` and `---recording-group` fields.

```
$ aws configservice put-configuration-recorder \
--configuration-recorder file://configurationRecorder.json \
--recording-group file://recordingGroup.json
```

The `configuration-recorder` field

The `configurationRecorder.json` file specifies `name` and `roleArn` as well as the default recording frequency for the configuration recorder (`recordingMode`).

```
{
  "name": "default",
  "roleARN": "arn:aws:iam::123456789012:role/config-role",
  "recordingMode": {
    "recordingFrequency": CONTINUOUS or DAILY,
    "recordingModeOverrides": [
        {
            "description": "Description you provide for the override",
            "recordingFrequency": CONTINUOUS or DAILY,
            "resourceTypes": [ Comma-separated list of resource types to include
 in the override ]
        }
    ]
  }
}
```

The `recording-group` field

The `recordingGroup.json` file specifies which types of resources AWS Config will record. Pass one or more resource types to exclude in the `resourceTypes` field as shown in the following example.

```
{
    "allSupported": false,
```

```
    "recordingStrategy": {
        "useOnly": "INCLUSION_BY_RESOURCE_TYPES"
    },
    "includeGlobalResourceTypes": false,
    "resourceTypes": [
        "AWS::EC2::EIP",
        "AWS::EC2::Instance",
        "AWS::EC2::NetworkAcl",
        "AWS::EC2::SecurityGroup",
        "AWS::CloudTrail::Trail",
        "AWS::EC2::Volume",
        "AWS::EC2::VPC",
        "AWS::IAM::User",
        "AWS::IAM::Policy"
  ]
}
```

For more information about these fields, see `put-configuration-recorder` in the *AWS CLI Command Reference*.

2. (Optional) To verify that your customer managed configuration recorder has the settings that you want, use the following `describe-configuration-recorders` command.

```
$ aws configservice describe-configuration-recorders
```

The following is an example response.

```
{
    "ConfigurationRecorders": [
        {
            "name": "default",
            "recordingGroup": {
                "allSupported": false,
                "exclusionByResourceTypes": {
                    "resourceTypes": []
                },
                "includeGlobalResourceTypes": false
                "recordingStrategy": {
                    "useOnly": "INCLUSION_BY_RESOURCE_TYPES"
                },
                "resourceTypes": [
                    "AWS::EC2::EIP",
```

```
                    "AWS::EC2::Instance",
                    "AWS::EC2::NetworkAcl",
                    "AWS::EC2::SecurityGroup",
                    "AWS::CloudTrail::Trail",
                    "AWS::EC2::Volume",
                    "AWS::EC2::VPC",
                    "AWS::IAM::User",
                    "AWS::IAM::Policy"
                ]
            },
            "recordingMode": {
                "recordingFrequency": CONTINUOUS or DAILY,
                "recordingModeOverrides": [
                 {
                     "description": "Description you provide for the override,
                     "recordingFrequency": CONTINUOUS or DAILY,
                     "resourceTypes": [ Comma-separated list of resource types to
 include in the override]
                }
              ]
            },
            "roleARN": "arn:aws:iam::123456789012:role/config-role"
        }
    ]
}
```

Excluding resources from recording with AWS Config

AWS Config allows you to exclude specific types of AWS resources from inventory tracking and compliance monitoring while still tracking all other supported resource types currently available in AWS Config, including those that will be added in the future. You can use this feature to concentrate on critical resources that are subject to your compliance and governance standards.

Excluding resources (Console)

If you do not want to record an AWS resource type, use one of the following recording strategies for the AWS Config console:

- **Record all resource types with customizable overrides**, choose the resource type you want to exclude, and choose the override "Exclude from recording"
- **Record specific resource types**.

For more detailed steps, see Recording resources (Console).

Excluding resources (AWS CLI)

If you do not want to record an AWS resource type, use one of the following recording strategies for the API/CLI:

- **Record all current and future resource types with exclusions** (`EXCLUSION_BY_RESOURCE_TYPES`)
- **Record specific resource types** (`INCLUSION_BY_RESOURCE_TYPES`).

For more detailed steps, see Recording Resources (AWS CLI).

Stopping AWS Config from recording with the customer managed configuration recorder

You can stop AWS Config from recording with the customer managed configuration recorder any time. After AWS Config stops recording a resource, it retains the configuration information that was previously captured, and you can continue to access this information.

For steps on how to stop recording, see Stopping the customer managed configuration recorder.

Recording Configurations with AWS Config for Third-Party Resources using the AWS CLI

Record configurations for third-party resources or custom resource types such as on premise servers, SAAS monitoring tools, and version control systems (like GitHub).

You can publish the configuration data of third-party resources into AWS Config and view and monitor the resource inventory and configuration history using the AWS Config console and APIs. You can use AWS Config to manage all your resources and evaluate resource configuration for compliance against best practices using AWS Config rules. You can also create AWS Config rules or conformance packs to evaluate these third-party resources against best practices, internal policies, and regulatory policies.

> **Note**
>
> If you have configured AWS Config to record all resource types, then third-party resources that are managed (created, updated, or deleted) through AWS CloudFormation are automatically tracked in AWS Config as configuration items.

Prerequisite: The third-party resources or custom resource type must be registered using AWS CloudFormation.

Topics

- Adding Third-Party Resources to AWS Config
- Record Configuration Items with AWS Config for Third-Party Resources using the AWS CLI
- Read Configuration Items with AWS Config for Third-Party Resources using the AWS CLI
- Delete Third-Party Resources from AWS Config using the AWS CLI

Adding Third-Party Resources to AWS Config

Follow these steps to add a third-party resource to AWS Config.

Topics

- Step 1: Setup Your Development Environment
- Step 2: Model Your Resource
- Step 3: Generate Artifacts
- Step 4: Register Your Resource
- Step 5: Publish Resource Configuration

Step 1: Setup Your Development Environment

Install and configure the AWS CloudFormation AWS CLI. The AWS CLI allows you to model and register your custom resources. For more information, see Custom Resources and What Is the CloudFormation Command Line Interface?.

Step 2: Model Your Resource

Create a resource provider schema that conforms to and validates the configuration of the resource type.

1. Use the `init` command to create your resource provider project and generate the files it requires.

```
$ cfn init
Initializing new project
```

2. The `init` command launches a wizard that walks you through setting up the project, including specifying the resource name. For this walkthrough, specify `MyCustomNamespace::Testing::WordPress`.

```
Enter resource type identifier (Organization::Service::Resource):
 MyCustomNamespace::Testing::WordPress
```

3. Enter a package name for your resource.

```
Enter a package name (empty for default 'com.custom.testing.wordpress'):
 com.custom.testing.wordpress
Initialized a new project in /workplace/user/custom-testing-wordpress
```

> **Note**
>
> In order to guarantee that any project dependencies are correctly resolved, you can import the generated project into your IDE with Maven support.
> For example, if you are using IntelliJ IDEA, you would need to do the following:
>
> - From the **File** menu, choose **New**, then choose **Project From Existing Sources**.
> - Navigate to the project directory
> - In the **Import Project** dialog box, choose **Import project from external model** and then choose **Maven**.
> - Choose **Next** and accept any defaults to complete importing the project.

4. Open the `mycustomnamespace-testing-wordpress.json` file that contains the schema for your resource. Copy and paste the following schema into `mycustomnamespace-testing-wordpress.json`.

```
{
  "typeName": "MyCustomNamespace::Testing::WordPress",
  "description": "An example resource that creates a website based on WordPress
 5.2.2.",
  "properties": {
    "Name": {
      "description": "A name associated with the website.",
      "type": "string",
      "pattern": "^[a-zA-Z0-9]{1,219}\\Z",
      "minLength": 1, "maxLength": 219
    },
    "SubnetId": {
      "description": "A subnet in which to host the website.",
      "pattern": "^(subnet-[a-f0-9]{13})|(subnet-[a-f0-9]{8})\\Z",
      "type": "string"
    },
    "InstanceId": {
      "description": "The ID of the instance that backs the WordPress site.",
      "type": "string"
    },
    "PublicIp": {
      "description": "The public IP for the WordPress site.",
      "type": "string"
    }
  },
  "required": [ "Name", "SubnetId" ],
  "primaryIdentifier": [ "/properties/PublicIp", "/properties/InstanceId" ],
  "readOnlyProperties": [ "/properties/PublicIp", "/properties/InstanceId" ],
  "additionalProperties": false
}
```

5. Validate the schema.

```
$ cfn validate
```

6. Update the auto-generated files in the resource provider package to view the resource provider schema updates. Upon initiation of the resource provider project, the AWS CLI generates supporting files and code for the resource provider. Regenerate the code to see the updated schema.

```
$ cfn generate
```

> **Note**
>
> When using Maven, as part of the build process the `generate` command is automatically run before the code is compiled. So your changes will never get out of sync with the generated code.
> Be aware the CloudFormation CLI must be in a location Maven/the system can find. For more information, see Setting up your environment for developing extensions.

For more information on the whole process, see Modeling Resource Providers for Use in AWS CloudFormation.

Step 3: Generate Artifacts

Run the following command to generate artifacts for `cfn submit`.

```
$ mvn package
```

Step 4: Register Your Resource

AWS Config does not require resource provider handlers to perform configuration tracking for your resource. Run the following command to register your resource.

```
$ cfn submit
```

For more information, see Registering Resource Providers for Use in AWS CloudFormation Templates.

Step 5: Publish Resource Configuration

Determine the configuration for MyCustomNamespace::Testing::WordPress.

```
{
  "Name": "MyWordPressSite",
  "SubnetId": "subnet-abcd0123",
  "InstanceId": "i-01234567",
  "PublicIp": "my-wordpress-site.com"
}
```

Determine the schema version id from AWS CloudFormation `DescribeType`.

In AWS Config, you can see see if this resource configuration is accepted. To evaluate compliance you can write AWS Config rules using this resource.

(Optional) To automate recording of configuration, implement periodic or change-based configuration collectors.

Record Configuration Items with AWS Config for Third-Party Resources using the AWS CLI

Record a configuration item for a third-party resource or a custom resource type using the following procedure:

Ensure you register the resource type `MyCustomNamespace::Testing::WordPress` with its matching schema.

1. Open a command prompt or a terminal window.
2. Enter the following command:

```
aws configservice put-resource-config --resource-type
 MyCustomNamespace::Testing::WordPress --resource-id resource-001 --schema-version-
id 00000001 --configuration  '{
  "Id": "resource-001",
  "Name": "My example custom resource.",
  "PublicAccess": false
}'
```

> **Note**
>
> As defined in the type schema, `writeOnlyProperties` will be removed from the configuration prior to being recorded by AWS Config. This means that these values will not be present when the configuration is obtained from read APIs. For more information on `writeOnlyProperties`, see Resource type schema.

Read Configuration Items with AWS Config for Third-Party Resources using the AWS CLI

Read a configuration item for a third-party resource or a custom resource type using the following procedure:

1. Open a command prompt or a terminal window.
2. Enter the following command:

```
aws configservice list-discovered-resources --resource-type
 MyCustomNamespace::Testing::WordPress
```

3. Press Enter.

   You should see output similar to the following:

```
{
    "resourceIdentifiers": [
        {
            "resourceType": "MyCustomNamespace::Testing::WordPress",
            "resourceId": "resource-001"
        }
    ]
}
```

4. Enter the following command:

```
aws configservice batch-get-resource-config --resource-keys '[ { "resourceType":
 "MyCustomNamespace::Testing::WordPress", "resourceId": "resource-001" } ]'
```

5. Press Enter.

   You should see output similar to the following:

```
{
    "unprocessedResourceKeys": [],
    "baseConfigurationItems": [
        {
            "configurationItemCaptureTime": 1569605832.673,
            "resourceType": "MyCustomNamespace::Testing::WordPress",
```

```
            "resourceId": "resource-001",
            "configurationStateId": "1569605832673",
            "awsRegion": "us-west-2",
            "version": "1.3",
            "supplementaryConfiguration": {},
            "configuration": "{\"Id\":\"resource-001\",\"Name\":\"My example custom
 resource.\",\"PublicAccess\":false}",
            "configurationItemStatus": "ResourceDiscovered",
            "accountId": "AccountId"
        }
    ]
}
```

Delete Third-Party Resources from AWS Config using the AWS CLI

Enter the following command to delete a third-party resource:

```
aws configservice delete-resource-config --resource-type
 MyCustomNamespace::Testing::WordPress --resource-id resource-002
```

If successful, the command executes with no additional output.

Recording Software Configuration for Managed Instances with AWS Config

You can use AWS Config to record software inventory changes on Amazon EC2 instances and on-premises servers. This enables you to see the historical changes to software configuration. For example, when a new Windows update is installed on a managed Windows instance, AWS Config records the changes and then sends the changes to your delivery channel, so that you are notified about the change. With AWS Config, you can see the history of when Windows updates were installed for the managed instance and how they changed over time.

Topics

- Prerequisites
- Recording Software Configurations

Prerequisites

You must complete the following steps to record software configuration changes:

- Turn on recording for the managed instance inventory resource type in AWS Config.
- Configure EC2 and on-premises servers as *managed instances* in AWS Systems Manager. A managed instance is a machine that has been configured for use with Systems Manager.
- Initiate collection of software inventory from your managed instances using the Systems Manager Inventory capability.

> **Note**
>
> **Systems Manager now supports creating configuration items for *unmanaged instances***
> Configuration item for unmanaged instances will have supplementary configuration with `Key: “InstanceStatus”` and `Value: “Unmanaged”`.
> **Configuration items for unmanaged instances won’t receive additional updates**
> To receive additional updates, the configuration item must be a managed instance.

You can also use AWS Config rules to monitor software configuration changes and be notified whether the changes are compliant or noncompliant against your rules. For example, if you create a rule that checks whether your managed instances have a specified application, and an instance doesn't have that application installed, AWS Config flags that instance as noncompliant against your rule. For a list of AWS Config managed rules, see List of AWS Config Managed Rules.

Recording Software Configurations

To enable recording of software configuration changes in AWS Config:

1. Turn on recording for all supported resource types or selectively record the managed instance inventory resource type in AWS Config. For more information, see Recording AWS Resources with AWS Config.
2. Launch an Amazon EC2 instance with an instance profile for Systems Manager that includes the **AmazonSSMManagedInstanceCore** managed policy. This AWS managed policy enables an instance to use Systems Manager service core functionality.

For information about other policies you can add to the instance profile for Systems Manager, see Create an IAM Instance Profile for Systems Manager in the *AWS Systems Manager User Guide*.

> **Important**
>
> SSM Agent is Amazon software that must be installed on a managed instance in order to communicate with the Systems Manager in the cloud. If your EC2 instance was created from an AMI for one of the following operating systems, the agent is preinstalled:
>
> - Windows Server 2003-2012 R2 AMIs published in November 2016 or later
> - Windows Server 2016 and 2019
> - Amazon Linux
> - Amazon Linux 2
> - Ubuntu Server 16.04
> - Ubuntu Server 18.04
>
> On EC2 instances that were not created from an AMI with the agent preinstalled, you must install the agent manually. For information, see the following topics in the *AWS Systems Manager User Guide*:
>
> - Installing and configuring SSM Agent on EC2 instances for Windows Server
> - Installing and configuring SSM Agent on EC2 instances for Linux

3. Initiate inventory collection as described in Configuring Inventory Collection in the *AWS Systems Manager User Guide*. The procedures are the same for Linux and Windows instances.

   AWS Config can record configuration changes for the following inventory types:

   - **Applications** – A list of applications for managed instances, such as antivirus software.
   - **AWS components** – A list of AWS components for managed instances, such as the AWS CLI and SDKs.
   - **Instance information** – Instance information such as OS name and version, domain, and firewall status.

- **Network configuration** – Configuration information such as IP address, gateway, and subnet mask.
- **Windows Updates** – A list of Windows updates for managed instances (Windows instances only).

> **Note**
>
> AWS Config doesn't support recording the custom inventory type at this time.

Inventory collection is one of many Systems Manager capabilities, which are grouped in the categories *Operations Management*, *Actions & Change*, *Instances & Nodes*, and *Shared Resources*. For more information, see What is Systems Manager? and Systems Manager Capabilities in the *AWS Systems Manager User Guide*.

Looking Up Resources That Are Discovered by AWS Config

You can use the AWS Config console, AWS CLI, and AWS Config API to look up the resources that AWS Config has taken an inventory of, or *discovered*, including deleted resources and resources that AWS Config is not currently recording. AWS Config discovers supported resource types only. For more information, see Supported Resource Types for AWS Config.

Looking Up Resources (Console)

You can use resource types or tag information to look up resources in the AWS Config console.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. On the **Resource inventory** page, specify the search options for the resources that you want to look up:
   - **Resource category** – Choose all resource categories or narrow results to only AWS Resources.
   - **Resource type** – Choose all resource types or select which resource(s) to filter by.
   - **Compliance** – Choose to filter by any compliance status, compliant, or noncompliant.
3. AWS Config lists the resources that match your search options. You can see the following information about the resources:

- **Resource identifier** – The resource identifier might be a resource ID or a resource name, if applicable. Choose the resource identifier link to view the resource details page.
- **Resource type** – The type of the resource is listed.
- **Compliance** – The status of the resource that AWS Config evaluated against your rule.

Looking Up Resources (AWS CLI)

You can use the AWS CLI to list resources that AWS Config has discovered.

Use the **AWS Configservice** `list-discovered-resources` command:

```
$ aws configservice list-discovered-resources --resource-type "AWS::EC2::Instance"
        {
            "resourceIdentifiers": [
                {
                    "resourceType": "AWS::EC2::Instance",
                    "resourceId": "i-nnnnnnnn"
                }
            ]
        }
```

To view the configuration details of a resource that is listed in the response, use the `get-resource-config-history` command, and specify the resource type and ID. For an example of this command and the response from AWS Config, see Viewing Configuration History.

Looking up Resources (API)

You specify a resource type, and AWS Config returns a list of resource identifiers for resources of that type. For more information, see ResourceIdentifier in the *AWS Config API Reference*.

Use the ListDiscoveredResources action.

To get the configuration details of a resource that is listed in the response, use the GetResourceConfigHistory action, and specify the resource type and ID.

Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config

> **Important**
>
> For accurate reporting on the compliance status, you must record the `AWS::Config::ResourceCompliance` resource type. For more information, see Recording AWS Resources.

You can use the AWS Config console or AWS SDKs to view the compliance information and the evaluation results of your resources.

Topics

- Viewing compliance (Console)
- Viewing compliance (AWS SDKs)

Viewing compliance (Console)

To view compliance (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the region selector is set to a region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the navigation pane, choose **Resources**. On the Resource inventory page, you can filter by resource category, resource type, and compliance status. Choose **Include deleted resources** if appropriate. The table displays the resource identifier for the resource type and the resource compliance status for that resource. The resource identifier might be a resource ID or a resource name.
4. Choose a resource from the resource identifier column.
5. Choose the **Resource Timeline** button. You can filter by Configuration events, Compliance events, or CloudTrail Events.

> **Note**
>
> Alternatively, on the Resource inventory page, you can directly choose the resource name. To access the resource timeline from the resource details page, choose the **Resource Timeline** button.

You can also view the compliance of your resources by looking them up on the **Resource inventory** page. For more information, see Looking Up Resources That Are Discovered by AWS Config.

Viewing compliance (AWS SDKs)

To get compliance information for your AWS resources

The following code examples show how to use `DescribeComplianceByResource`.

CLI

AWS CLI

To get compliance information for your AWS resources

The following command returns compliance information for each EC2 instance that is recorded by AWS Config and that violates one or more rules:

```
aws configservice describe-compliance-by-resource --resource-
type AWS::EC2::Instance --compliance-types NON_COMPLIANT
```

In the output, the value for each `CappedCount` attribute indicates how many rules the resource violates. For example, the following output indicates that instance `i-1a2b3c4d` violates 2 rules.

Output:

```
{
    "ComplianceByResources": [
        {
            "ResourceType": "AWS::EC2::Instance",
            "ResourceId": "i-1a2b3c4d",
            "Compliance": {
```

```
                "ComplianceContributorCount": {
                    "CappedCount": 2,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            }
        },
        {
            "ResourceType": "AWS::EC2::Instance",
            "ResourceId": "i-2a2b3c4d ",
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            }
        }
    ]
}
```

- For API details, see DescribeComplianceByResource in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example checks the `AWS::SSM::ManagedInstanceInventory` resource type for 'COMPLIANT' compliance type.

```
Get-CFGComplianceByResource -ComplianceType COMPLIANT -ResourceType
 AWS::SSM::ManagedInstanceInventory
```

Output:

```
Compliance                            ResourceId          ResourceType
----------                            ----------          ------------
Amazon.ConfigService.Model.Compliance i-0123bcf4b567890e3
 AWS::SSM::ManagedInstanceInventory
Amazon.ConfigService.Model.Compliance i-0a1234f6f5d6b78f7
 AWS::SSM::ManagedInstanceInventory
```

- For API details, see DescribeComplianceByResource in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

To get the compliance summary of your AWS resources

The following code examples show how to use `GetComplianceSummaryByResourceType`.

CLI

AWS CLI

To get the compliance summary for all resource types

The following command returns the number of AWS resources that are noncompliant and the number that are compliant:

```
aws configservice get-compliance-summary-by-resource-type
```

In the output, the value for each `CappedCount` attribute indicates how many resources are compliant or noncompliant.

Output:

```
{
    "ComplianceSummariesByResourceType": [
        {
            "ComplianceSummary": {
                "NonCompliantResourceCount": {
                    "CappedCount": 16,
                    "CapExceeded": false
                },
                "ComplianceSummaryTimestamp": 1453237464.543,
                "CompliantResourceCount": {
                    "CappedCount": 10,
                    "CapExceeded": false
                }
            }
        }
    ]
}
```

To get the compliance summary for a specific resource type

The following command returns the number of EC2 instances that are noncompliant and the number that are compliant:

```
aws configservice get-compliance-summary-by-resource-type --resource-
types AWS::EC2::Instance
```

In the output, the value for each `CappedCount` attribute indicates how many resources are compliant or noncompliant.

Output:

```
{
    "ComplianceSummariesByResourceType": [
        {
            "ResourceType": "AWS::EC2::Instance",
            "ComplianceSummary": {
                "NonCompliantResourceCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceSummaryTimestamp": 1452204923.518,
                "CompliantResourceCount": {
                    "CappedCount": 7,
                    "CapExceeded": false
                }
            }
        }
    ]
}
```

- For API details, see GetComplianceSummaryByResourceType in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns the number of resources that are compliant or noncompliant and converts the output to json.

```
Get-CFGComplianceSummaryByResourceType -Select
 ComplianceSummariesByResourceType.ComplianceSummary | ConvertTo-Json
{
  "ComplianceSummaryTimestamp": "2019-12-14T06:14:49.778Z",
  "CompliantResourceCount": {
    "CapExceeded": false,
    "CappedCount": 2
  },
  "NonCompliantResourceCount": {
    "CapExceeded": true,
    "CappedCount": 100
  }
}
```

- For API details, see GetComplianceSummaryByResourceType in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

To get the evaluation results for an AWS resource

The following code examples show how to use `GetComplianceDetailsByResource`.

CLI

AWS CLI

To get the evaluation results for an AWS resource

The following command returns the evaluation results for each rule with which the EC2 instance `i-1a2b3c4d` does not comply:

```
aws configservice get-compliance-details-by-resource --resource-
type AWS::EC2::Instance --resource-id i-1a2b3c4d --compliance-types NON_COMPLIANT
```

Output:

```
{
    "EvaluationResults": [
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
```

```
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314643.288,
            "ConfigRuleInvokedTime": 1450314643.034,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "RequiredTagForEC2Instances"
                }
            },
            "ResultRecordedTime": 1450314645.261,
            "ConfigRuleInvokedTime": 1450314642.948,
            "ComplianceType": "NON_COMPLIANT"
        }
    ]
}
```

- For API details, see GetComplianceDetailsByResource in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example evaulation results for the given resource.

```
Get-CFGComplianceDetailsByResource -ResourceId ABCD5STJ4EFGHIVEW6JAH -
ResourceType 'AWS::IAM::User'
```

Output:

```
Annotation                 :
ComplianceType             : COMPLIANT
ConfigRuleInvokedTime      : 8/25/2019 11:34:56 PM
EvaluationResultIdentifier :
 Amazon.ConfigService.Model.EvaluationResultIdentifier
```

```
ResultRecordedTime          : 8/25/2019 11:34:56 PM
ResultToken                 :
```

- For API details, see GetComplianceDetailsByResource in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Viewing Compliance History for your AWS Resources with AWS Config

> **Important**
>
> For accurate reporting on the compliance status, you must record the `AWS::Config::ResourceCompliance` resource type. For more information, see Recording AWS Resources.

You can view the configuration, relationships, and number of changes made to a resource in the AWS Config console. You can view the configuration history for a resource using AWS CLI.

Topics

- Viewing Compliance History (Console)
- Viewing Compliance History (AWS CLI)
- Viewing Compliance History Timeline for Resources and Rules

Viewing Compliance History (Console)

Viewing Compliance History Using the Console

When you look up resources on the **Resource inventory** page, choose the resource name or ID in the resource identifier column to view the resource's details page. The details page provides information about the configuration, relationships, and number of changes made to that resource.

To access the resource timeline from the resource details page, choose the **Resource Timeline** button. The Resource timeline captures changes as `ConfigurationItems` over a period of time for a specific resource. You can filter by Configuration events, Compliance events, or CloudTrail Events.

Viewing Compliance History (AWS CLI)

Viewing Compliance History Using the AWS CLI

The configuration items that AWS Config records are delivered to the specified delivery channel on demand as a configuration snapshot and as a configuration stream. You can use the AWS CLI to view history of configuration items for each resource.

Viewing Configuration History

Enter the `get-resource-config-history` command and specify the resource type and the resource ID, for example:

```
$ aws configservice get-resource-config-history --resource-type AWS::EC2::SecurityGroup
 --resource-id sg-6fbb3807
{
    "configurationItems": [
        {
            "configurationItemCaptureTime": 1414708529.9219999,
            "relationships": [
                {
                    "resourceType": "AWS::EC2::Instance",
                    "resourceId": "i-7a3b232a",
                    "relationshipName": "Is associated with Instance"
                },
                {
                    "resourceType": "AWS::EC2::Instance",
                    "resourceId": "i-8b6eb2ab",
                    "relationshipName": "Is associated with Instance"
                },
                {
                    "resourceType": "AWS::EC2::Instance",
                    "resourceId": "i-c478efe5",
                    "relationshipName": "Is associated with Instance"
                },
                {
                    "resourceType": "AWS::EC2::Instance",
                    "resourceId": "i-e4cbe38d",
                    "relationshipName": "Is associated with Instance"
                }
            ],
            "availabilityZone": "Not Applicable",
            "tags": {},
```

```
            "resourceType": "AWS::EC2::SecurityGroup",
            "resourceId": "sg-6fbb3807",
            "configurationStateId": "1",
            "relatedEvents": [],
            "arn": "arn:aws:ec2:us-east-2:012345678912:security-group/default",
            "version": "1.0",
            "configurationItemMD5Hash": "860aa81fc3869e186b2ee00bc638a01a",
            "configuration": "{\"ownerId\":\"605053316265\",\"groupName\":\"default
\",\"groupId\":\"sg-6fbb3807\",\"description\":\"default group\",\"ipPermissions
\":[{\"ipProtocol\":\"tcp\",\"fromPort\":80,\"toPort\":80,\"userIdGroupPairs\":
[{\"userId\":\"amazon-elb\",\"groupName\":\"amazon-elb-sg\",\"groupId\":\"sg-843f59ed
\"}],\"ipRanges\":[\"0.0.0.0/0\"]},{\"ipProtocol\":\"tcp\",\"fromPort\":0,\"toPort
\":65535,\"userIdGroupPairs\":[{\"userId\":\"605053316265\",\"groupName\":\"default
\",\"groupId\":\"sg-6fbb3807\"}],\"ipRanges\":[]},{\"ipProtocol\":\"udp\",\"fromPort
\":0,\"toPort\":65535,\"userIdGroupPairs\":[{\"userId\":\"605053316265\",\"groupName
\":\"default\",\"groupId\":\"sg-6fbb3807\"}],\"ipRanges\":[]},{\"ipProtocol\":\"icmp
\",\"fromPort\":-1,\"toPort\":-1,\"userIdGroupPairs\":[{\"userId\":\"605053316265\",
\"groupName\":\"default\",\"groupId\":\"sg-6fbb3807\"}],\"ipRanges\":[]},{\"ipProtocol
\":\"tcp\",\"fromPort\":1433,\"toPort\":1433,\"userIdGroupPairs\":[],\"ipRanges
\":[\"0.0.0.0/0\"]},{\"ipProtocol\":\"tcp\",\"fromPort\":3389,\"toPort\":3389,
\"userIdGroupPairs\":[],\"ipRanges\":[\"207.171.160.0/19\"]}],\"ipPermissionsEgress\":
[],\"vpcId\":null,\"tags\":[]}",
            "configurationItemStatus": "ResourceDiscovered",
            "accountId": "605053316265"
        }
    ],
    "nextToken":
     ..........
```

For detailed explanation of the response fields, see Components of a Configuration Item and Supported Resource Types for AWS Config.

Example Amazon EBS Configuration History from AWS Config

AWS Config generates a set of files that each represent a resource type and lists all configuration changes for the resources of that type that AWS Config is recording. AWS Config exports this resource-centric configuration history as an object in the Amazon S3 bucket that you specified when you enabled AWS Config. The configuration history file for each resource type contains the changes that were detected for the resources of that type since the last history file was delivered. The history files are typically delivered every six hours.

The following is an example of the contents of the Amazon S3 object that describes the configuration history of all the Amazon Elastic Block Store volumes in the current region for your

AWS account. The volumes in this account include `vol-ce676ccc` and `vol-cia007c`. Volume `vol-ce676ccc` had two configuration changes since the previous history file was delivered while volume `vol-cia007c` had one change.


```
{
    "fileVersion": "1.0",
    "requestId": "asudf8ow-4e34-4f32-afeb-0ace5bf3trye",
    "configurationItems": [
        {
            "snapshotVersion": "1.0",
            "resourceId": "vol-ce676ccc",
            "arn": "arn:aws:us-west-2b:123456789012:volume/vol-ce676ccc",
            "accountId": "12345678910",
            "configurationItemCaptureTime": "2014-03-07T23:47:08.918Z",
            "configurationStateID": "3e660fdf-4e34-4f32-afeb-0ace5bf3d63a",
            "configurationItemStatus": "OK",
            "relatedEvents": [
                "06c12a39-eb35-11de-ae07-adb69edbb1e4",
                "c376e30d-71a2-4694-89b7-a5a04ad92281"
            ],
            "availibilityZone": "us-west-2b",
            "resourceType": "AWS::EC2::Volume",
            "resourceCreationTime": "2014-02-27T21:43:53.885Z",
            "tags": {},
            "relationships": [
                {
                    "resourceId": "i-344c463d",
                    "resourceType": "AWS::EC2::Instance",
                    "name": "Attached to Instance"
                }
            ],
            "configuration": {
                "volumeId": "vol-ce676ccc",
                "size": 1,
                "snapshotId": "",
                "availabilityZone": "us-west-2b",
                "state": "in-use",
                "createTime": "2014-02-27T21:43:53.0885+0000",
                "attachments": [
                    {
                        "volumeId": "vol-ce676ccc",
                        "instanceId": "i-344c463d",
                        "device": "/dev/sdf",
```

```
                        "state": "attached",
                        "attachTime": "2014-03-07T23:46:28.0000+0000",
                        "deleteOnTermination": false
                    }
                ],
                "tags": [
                    {
                        "tagName": "environment",
                        "tagValue": "PROD"
                    },
                    {
                        "tagName": "name",
                        "tagValue": "DataVolume1"
                    }
                ],
                "volumeType": "standard"
            }
        },
        {
            "configurationItemVersion": "1.0",
            "resourceId": "vol-ce676ccc",
            "arn": "arn:aws:us-west-2b:123456789012:volume/vol-ce676ccc",
            "accountId": "12345678910",
            "configurationItemCaptureTime": "2014-03-07T21:47:08.918Z",
            "configurationItemState": "3e660fdf-4e34-4f32-sseb-0ace5bf3d63a",
            "configurationItemStatus": "OK",
            "relatedEvents": [
                "06c12a39-eb35-11de-ae07-ad229edbb1e4",
                "c376e30d-71a2-4694-89b7-a5a04w292281"
            ],
            "availibilityZone": "us-west-2b",
            "resourceType": "AWS::EC2::Volume",
            "resourceCreationTime": "2014-02-27T21:43:53.885Z",
            "tags": {},
            "relationships": [
                {
                    "resourceId": "i-344c463d",
                    "resourceType": "AWS::EC2::Instance",
                    "name": "Attached to Instance"
                }
            ],
            "configuration": {
                "volumeId": "vol-ce676ccc",
                "size": 1,
```

```
                "snapshotId": "",
                "availabilityZone": "us-west-2b",
                "state": "in-use",
                "createTime": "2014-02-27T21:43:53.0885+0000",
                "attachments": [
                    {
                        "volumeId": "vol-ce676ccc",
                        "instanceId": "i-344c463d",
                        "device": "/dev/sdf",
                        "state": "attached",
                        "attachTime": "2014-03-07T23:46:28.0000+0000",
                        "deleteOnTermination": false
                    }
                ],
                "tags": [
                    {
                        "tagName": "environment",
                        "tagValue": "PROD"
                    },
                    {
                        "tagName": "name",
                        "tagValue": "DataVolume1"
                    }
                ],
                "volumeType": "standard"
            }
        },
        {
            "configurationItemVersion": "1.0",
            "resourceId": "vol-cia007c",
            "arn": "arn:aws:us-west-2b:123456789012:volume/vol-cia007c",
            "accountId": "12345678910",
            "configurationItemCaptureTime": "2014-03-07T20:47:08.918Z",
            "configurationItemState": "3e660fdf-4e34-4f88-sseb-0ace5bf3d63a",
            "configurationItemStatus": "OK",
            "relatedEvents": [
                "06c12a39-eb35-11de-ae07-adjhk8edbb1e4",
                "c376e30d-71a2-4694-89b7-a5a67u292281"
            ],
            "availibilityZone": "us-west-2b",
            "resourceType": "AWS::EC2::Volume",
            "resourceCreationTime": "2014-02-27T20:43:53.885Z",
            "tags": {},
            "relationships": [
```

```
                {
                    "resourceId": "i-344e563d",
                    "resourceType": "AWS::EC2::Instance",
                    "name": "Attached to Instance"
                }
            ],
            "configuration": {
                "volumeId": "vol-cia007c",
                "size": 1,
                "snapshotId": "",
                "availabilityZone": "us-west-2b",
                "state": "in-use",
                "createTime": "2014-02-27T20:43:53.0885+0000",
                "attachments": [
                    {
                        "volumeId": "vol-cia007c",
                        "instanceId": "i-344e563d",
                        "device": "/dev/sdf",
                        "state": "attached",
                        "attachTime": "2014-03-07T23:46:28.0000+0000",
                        "deleteOnTermination": false
                    }
                ],
                "tags": [
                    {
                        "tagName": "environment",
                        "tagValue": "PROD"
                    },
                    {
                        "tagName": "name",
                        "tagValue": "DataVolume2"
                    }
                ],
                "volumeType": "standard"
            }
        }
    ]
}
```


Viewing Compliance History Timeline for Resources and Rules

AWS Config supports storing compliance state changes of resources as evaluated by AWS Config Rules. The resource compliance history is presented in the form of a timeline. The timeline captures

changes as `ConfigurationItems` over a period of time for a specific resource. For information on the contents of `ConfigurationItem`, see ConfigurationItem in the AWS Config API Reference.

You can opt in or out to record all resource types in AWS Config. If you have opted to record all resource types, AWS Config automatically begins recording the resource compliance history as evaluated by AWS Config Rules. By default, AWS Config records the configuration changes for all supported resources. You can also select only the specific resource compliance history resource type: `AWS::Config::ResourceCompliance`. For more information, see Recording AWS Records.

Viewing Resource Timeline Using Resources

Access the resource timeline by selecting a specific resource from the Resource inventory page.

1. Choose the **Resources** from the left navigation.
2. On the Resource inventory page, you can filter by resource category, resource type, and compliance status. Choose **Include deleted resources** if appropriate.

   The table displays the resource identifier for the resource type and the resource compliance status for that resource. The resource identifier might be a resource ID or a resource name.
3. Choose a resource from the resource identifier column.
4. Choose the **Resource Timeline** button. You can filter by Configuration events, Compliance events, or CloudTrail Events.

> **Note**
>
> Alternatively, on the Resource inventory page, you can directly choose the resource name. To access the resource timeline from the resource details page, choose the **Resource Timeline** button.

Viewing Resource Timeline Using Rules

Access the resource timeline by selecting a specific rule from the Rule page.

1. Select the **Rules** from the left navigation.
2. On the Rule page, choose a rule evaluating your relevant resources. If no rules are displayed on the screen, add rules using the **Add rule** button.
3. On the Rule details page, select the resources from the Resources evaluated table.

4. Select the **Resource Timeline** button. The resource timeline is displayed.

Querying Compliance History for your AWS Resources

Query the resource compliance history using get-resource-config-history using the resource type `AWS::Config::ResourceCompliance`.

```
aws configservice get-resource-config-history --resource-type
 AWS::Config::ResourceCompliance --resource-id AWS::S3::Bucket/configrules-bucket
```

You should see output similar to the following:

```
{
 "configurationItems": [
  {
   "configurationItemCaptureTime": 1539799966.921,
   "relationships": [
    {
     "resourceType": "AWS::S3::Bucket",
     "resourceId": "configrules-bucket",
     "relationshipName": "Is associated with "
    }
   ]
   "tags": {},
   "resourceType": "AWS::Config::ResourceCompliance",
   "resourceId": "AWS::S3::Bucket/configrules-bucket",
   "ConfigurationStateId": "1539799966921",
   "relatedEvents": [];
   "awsRegion": "us-west-2",
   "version": "1.3",
   "configurationItemMD5Hash": "",
   "supplementaryConfiguration": {},
   "configuration": "{\"complianceType\":\"COMPLIANT\",\"targetResourceId\":
\"configrules-bucket\",\"targetResourceType\":\"AWS::S3::Bucket\",\configRuleList"\":
[{\"configRuleArn\":\"arn:aws:config:us-west-2:AccountID:config-rule/config-rule-w1gogw
\",\"configRuleId\":\"config-rule-w1gogw\",\"configRuleName\":\"s3-bucket-logging-
enabled\",\"complianceType\":\"COMPLIANT\"}]}",

   "configurationItemStatus": "ResourceDiscovered",
   "accountId": "AccountID"
  }
 ]
```

```
}
```

Tagging Your AWS Config Resources

A tag is a label that you assign to an AWS resource. Each tag consists of a *key* and an optional *value*, both of which you define. Tags make it easier to manage, search for, and filter resources.

Tags enable you to categorize your AWS resources in different ways, for example, by purpose, owner, or environment. This is useful when you have many resources of the same type—you can quickly identify a specific resource based on the tags you've assigned to it. You can assign one or more tags to your AWS resources. Each tag has an associated value.

We recommend that you devise a set of tag keys that meets your needs for each resource type. Using a consistent set of tag keys makes it easier for you to manage your AWS resources. You can search and filter the resources based on the tags you add.

Tags are interpreted strictly as a string of characters and are not automatically assigned to your resources. You can edit tag keys and values, and you can remove tags from a resource at any time. You can set the value of a tag to an empty string, but you can't set the value of a tag to null. If you add a tag that has the same key as an existing tag on that resource, the new value overwrites the old value. If you delete a resource, any tags for the resource are also deleted.

You can work with tags using the AWS Command Line Interface (AWS CLI) and the AWS Config API reference.

Restrictions Related to Tagging

The following basic restrictions apply to tags.

Restriction	Description
Maximum number of tags per resource	50
Maximum key length	128 Unicode characters in UTF-8
Maximum value length	256 Unicode characters in UTF-8
Prefix restriction	Do not use the `aws:` prefix in your tag names or values because it is reserved for AWS use.

Restriction	Description
	You can't edit or delete tag names or values with this prefix. Tags with this prefix do not count against your tags per resource limit.
Character restrictions	Tags may only contain Unicode letters, digits, whitespace, or these symbols: `_ . : / = + - @`

Managing Tags with AWS Config API Actions

Tag based access controls are available for three resources `ConfigurationAggregator`, `AggregationAuthorization`, and `ConfigRule`. Use the following to add, update, list, and delete the tags for your resources.

- ListTagsForResource
- TagResource
- UntagResource

> **Note**
>
> `TagResource` and `UntagResource` require certain AWS Identity and Access Management (IAM) permissions to control access. For more information, see Controlling access based on tag keys in the IAM User Guide.

Evaluating Resources with AWS Config Rules

Use AWS Config to evaluate the configuration settings of your AWS resources. You do this by creating AWS Config rules, which represent your ideal configuration settings. AWS Config provides customizable, predefined rules called managed rules to help you get started.

Topics

- Considerations
- Region Support
- Components of an AWS Config Rule
- AWS Config Managed Rules
- AWS Config Custom Rules
- Service-Linked AWS Config Rules
- Managing AWS Config Rules Across All Accounts in Your Organization
- Adding AWS Config Rules
- Updating AWS Config Rules
- Deleting AWS Config Rules
- Viewing Details and Compliance Information for your AWS Config Rules
- Turning on Proactive Evaluation for AWS Config Rules
- Sending Rule Evaluations to Security Hub
- Evaluating Your Resources with AWS Config Rules
- Deleting Evaluation Results from AWS Config Rules
- Troubleshooting for AWS Config rules

Considerations

Cost Considerations

For details about the costs associated with resource recording, see AWS Config pricing.

Recommendation: Consider excluding the `AWS::Config::ResourceCompliance` resource type from recording before deleting rules

Deleting rules creates configuration items (CIs) for `AWS::Config::ResourceCompliance` that can affect your costs for the configuration recorder. If you are deleting rules which evaluate a large number of resource types, this can lead to a spike in the number of CIs recorded.

To avoid the associated costs, you can opt to disable recording for the `AWS::Config::ResourceCompliance` resource type before deleting rules, and re-enable recording after the rules have been deleted.

However, since deleting rules is an asynchronous process, it might take an hour or more to complete. During the time when recording is disabled for `AWS::Config::ResourceCompliance`, rule evaluations will not be recorded in the associated resource's history.

AWS Config recommends that you weigh these factors on a case-by-case basis before deciding how to proceed with deleting rules.

Recommendation: Add logic to handle the evaluation of deleted resources for custom lambda rules

When creating AWS Config custom lambda rules, it is highly recommended that you add logic to handle the evaluation of deleted resources.

When evaluation results are marked as `NOT_APPLICABLE`, they will be marked for deletion and cleaned up. If they're NOT marked as `NOT_APPLICABLE`, the evaluation results will remain unchanged until the rule is deleted, which can cause an unexpected spike in the creation of CIs for `AWS::Config::ResourceCompliance` upon rule deletion.

For information on how to set AWS Config custom lambda rules to return `NOT_APPLICABLE` for deleted resources, see Managing deleted resources with AWS Config custom lambda rules.

Recommendation: Provide the resources in scope for custom lambda rules

AWS Config Custom Lambda Rules can cause a high number of Lambda function invocations if the rule is not scoped to one or more resource types. To avoid increased activity associated with your account, it is highly recommended to provide resources in scope for your Custom Lambda rules. If no resource types are selected, the rule will invoke the Lambda function for all resources in the account.

Other considerations

Defaut Values for Managed Rules

The default values specified for managed rules are pre-populated only when using the AWS console. Default values are not supplied for the API, CLI, or SDK.

Configuration Item Recording Delays

AWS Config usually records configuration changes to your resources right after a change is detected, or at the frequency that you specify. However, this is on a best effort basis and can take longer at times. For example, a resource type with known delays is `AWS::SecretsManager::Secret`. This resource type is an example, and this list is non-exhaustive.

Policies and compliance results

IAM policies and other policies managed in AWS Organizations can impact whether AWS Config has permissions to record configuration changes for your resources. Additionally, rules directly evaluate the configuration of a resource and rules don't take into account these policies when running evaluations. Make sure that the policies in effect align with how you intend to use AWS Config.

Tagging support for resource types

If a resource type does not support tagging or does not include tag information in its describe API response, AWS Config won't capture tag data in the configuration items (CIs) for that resource type. AWS Config will still record these resources. However, any functionality that relies on tag data won't work. This affects tag-based filtering, grouping, or compliance evaluation that relies on tag data.

Directory Buckets Are Not Supported

Managed rules only support general purpose buckets when evaluating Amazon Simple Storage Service (Amazon S3) resources. For more information on general purpose buckets and directory buckets, see Buckets overview and Directory buckets in the Amazon S3 User Guide.

Managed Rules and Global IAM Resource Types

The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.

If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.

To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Region Support

Currently, the AWS Config Rule feature is supported in the following AWS regions. For a list of which individual AWS Config rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com config-fips.us-east-2.amazonaws.com	HTTPS HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com config-fips.us-east-1.amazonaws.com	HTTPS HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com config-fips.us-west-1.amazonaws.com	HTTPS HTTPS
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com config-fips.us-west-2.amazonaws.com	HTTPS HTTPS

Region Name	Region	Endpoint	Protocol	
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS	
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS	
Asia Pacific (Malaysia)	ap-southeast-5	config.ap-southeast-5.amazonaws.com	HTTPS	
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Taipei)	ap-east-2	config.ap-east-2.amazonaws.com	HTTPS
Asia Pacific (Thailand)	ap-southeast-7	config.ap-southeast-7.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Mexico (Central)	mx-central-1	config.mx-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol	
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS	

Deploying AWS Config Rules across member accounts in an AWS Organization is supported in the following Regions.

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS	
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS	
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS	
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Components of an AWS Config Rule

AWS Config rules evaluate the configuration settings of your AWS resources. This page discusses the components of a rule.

Topics

- How AWS Config Rules Work
- Trigger Types
- Evaluation Modes
- AWS Config Rule Metadata

How AWS Config Rules Work

While AWS Config continuously tracks the configuration changes that occur among your resources, it checks whether these changes do not comply with the conditions in your rules. If a resource does not comply with rule, AWS Config flags the resource and the rule as *noncompliant*.

There are four possible evaluation results for an AWS Config rule.

Evaluation result	Description
`COMPLIANT`	The rule passes the conditions of the compliance check.
`NON_COMPLIANT`	The rule fails the conditions of the compliance check.
`ERROR`	The one of the required/optional parameter s is not valid, not of the correct type, or is formatted incorrectly.
`NOT_APPLICABLE`	Used to filter out resources that the logic of the rule cannot be applied to. For example, the alb-desync-mode-check rule only checks Application Load Balancers, and ignores Network Load Balancers and Gateway Load Balancers.

For example, when an EC2 volume is created, AWS Config can evaluate the volume against a rule that requires volumes to be encrypted. If the volume is not encrypted, AWS Config flags the volume and the rule as noncompliant. AWS Config can also check all of your resources for account-wide requirements. For example, AWS Config can check whether the number of EC2 volumes in an account stays within a desired total, or whether an account uses AWS CloudTrail for logging.

Trigger Types

After you add a rule to your account, AWS Config compares your resources to the conditions of the rule. After this initial evaluation, AWS Config continues to run evaluations each time one is triggered. The evaluation triggers are defined as part of the rule, and they can include the following types.

Trigger type	Description
Configuration changes	AWS Config runs evaluations for the rule when there is a resource that matches the rule's scope and there is a change in configuration of the resource. The evaluation runs after AWS Config sends a configuration item change notification. You choose which resources initiate the evaluation by defining the rule's *scope*. The scope can include the following: • One or more resource types • A combination of a resource type and a resource ID • A combination of a tag key and value • When any recorded resource is created, updated, or deleted AWS Config runs the evaluation when it detects a change to a resource that matches the rule's scope. You can use the scope to define which resources initiate evaluations.

Trigger type	Description
Periodic	AWS Config runs evaluations for the rule at a frequency that you choose; for example, every 24 hours.
Hybrid	Some rules have both configuration change and periodic triggers. For these rules, AWS Config evaluates your resources when it detects a configuration change and also at the frequency that you specify.

Evaluation Modes

There are two evaluation modes for AWS Config rules.

Evaluation mode	Description
Proactive	Use proactive evaluation to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.
Detective	Use detective evaluation to evaluate resources that have already been deployed. This allows you to evaluate the configuration settings of your existing resources.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

For more information, see Turning on Proactive Evaluation for AWS Config Rules.

List of managed rules with proactive evaluation

For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.

List of supported resource types for proactive evaluation

The following is a list of resource types that are supported for proactive evaluation:

- `AWS::ApiGateway::Stage`
- `AWS::AutoScaling::AutoScalingGroup`
- `AWS::EC2::EIP`
- `AWS::EC2::Instance`
- `AWS::EC2::Subnet`
- `AWS::Elasticsearch::Domain`
- `AWS::Lambda::Function`
- `AWS::RDS::DBInstance`
- `AWS::Redshift::Cluster`
- `AWS::S3::Bucket`
- `AWS::SNS::Topic`

AWS Config Rule Metadata

AWS Config rules can contain the following mutable metadata:

defaultName

The defaultName is the name that instances of a rule will get by default.

description

The rule description provides context for what the rule evaluates. The AWS Config Console has a limit of 256 characters. As a best practice, the rule description should begin with “Checks if” and include a description of the NON_COMPLIANT scenario. Service Names should be written in full beginning with AWS or Amazon when first mentioned in the rule description. For example, AWS

CloudTrail or Amazon CloudWatch instead of CloudTrail or CloudWatch for first use. Services names can be abbreviated after subsequent reference.

scope

The scope determines which resource types the rule targets. For a list of supported resource types, see Supported Resource Types.

compulsoryInputParameterDetails

The compulsoryInputParameterDetails are used for parameters that are required for a rule to do its evaluation. For example, the `access-keys-rotated` managed rule includes `maxAccessKeyAge` as a required parameter. If a parameter is required, it will not be marked as (Optional). For each parameter, a type must be specified. Type can be one of "String", "int", "double", "CSV", "boolean" and "StringMap".

optionalInputParameterDetails

The optionalInputParameterDetails are used for parameters that are optional for a rule to do its evaluation. For example, the `elasticsearch-logs-to-cloudwatch` managed rule includes `logTypes` as an optional parameter. For each parameter, a type must be specified. Type can be one of "String", "int", "double", "CSV", "boolean" and "StringMap".

supportedEvaluationModes

The supportedEvaluationModes determines when resources will be evaluated, either before a resource has been deployed or after a resource has been deployed.

`DETECTIVE` is used to evaluate resources which have already been deployed. This allows you to evaluate the configuration settings of your existing resources. `PROACTIVE` is used to evaluate resources before they have been deployed.

This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.

You can specify the supportedEvaluationModes to `DETECTIVE`, `PROACTIVE`, or both `DETECTIVE` and `PROACTIVE`. You must specify an evaluation mode and this field cannot remain empty.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

AWS Config Managed Rules

AWS Config provides *AWS managed rules*, which are predefined, customizable rules that AWS Config uses to evaluate whether your AWS resources comply with common best practices. For example, you could use a managed rule to quickly start assessing whether your Amazon Elastic Block Store (Amazon EBS) volumes are encrypted or whether specific tags are applied to your resources.

The AWS Config console guides you through the process of configuring and activating a managed rule. You can also use the AWS Command Line Interface or AWS Config API to pass the JSON code that defines your configuration of a managed rule.

You can customize the behavior of a managed rule to suit your needs. For example, you can define the rule's scope to constrain which resources trigger an evaluation for the rule, such as EC2 instances or volumes.

You can customize the rule's parameters to define attributes that your resources must have to comply with the rule. For example, you can customize a parameter to specify that your security group should block incoming traffic to a specific port number.

Before using managed rules, see Considerations.

Topics

- List of AWS Config Managed Rules
- List of AWS Config Managed Rules by Evaluation Mode
- List of AWS Config Managed Rules by Trigger Type
- List of AWS Config Managed Rules by Region Availability
- Creating AWS Config Managed Rules With AWS CloudFormation Templates

List of AWS Config Managed Rules

AWS Config currently supports the following managed rules. Before using these rules, see Considerations.

Topics

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
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- cloudfront-associated-with-waf
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- cloudfront-default-root-object-configured
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- cloudfront-origin-failover-enabled
- cloudfront-s3-origin-access-control-enabled
- cloudfront-s3-origin-non-existent-bucket
- cloudfront-security-policy-check
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- cloudfront-traffic-to-origin-encrypted
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- cloudtrail-all-read-s3-data-event-check
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- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
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- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
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- ec2-instance-detailed-monitoring-enabled
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- ec2-instance-multiple-eni-check
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- elb-cross-zone-load-balancing-enabled
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- iam-role-managed-policy-check
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- kms-key-policy-no-public-access
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- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
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- neptune-cluster-copy-tags-to-snapshot-enabled
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- rds-cluster-default-admin-check
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- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
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- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
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- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
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- s3-bucket-logging-enabled
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- s3-bucket-policy-not-more-permissive
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- s3-bucket-ssl-requests-only
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- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
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- sagemaker-feature-group-tagged
- sagemaker-image-description
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- sagemaker-notebook-instance-kms-key-configured
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- ses-malware-scanning-enabled
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- storagegateway-resources-protected-by-backup-plan
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- transfer-connector-logging-enabled
- transfer-connector-tagged
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- transfer-workflow-description
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- waf-global-rulegroup-not-empty
- waf-global-rule-not-empty
- waf-global-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

access-keys-rotated

Checks if active IAM access keys are rotated (changed) within the number of days specified in `maxAccessKeyAge`. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

> **Warning**
>
> Do not provide your access keys to unauthorized parties, even to help find your account identifiers. By doing this, you might give someone permanent access to your account. The security best practice is to remove passwords and access keys when users no longer need them.

> **Note**
>
> **Resource Type Marked as Noncompliant in the Console**
> If this rule finds that any of your access keys are noncompliant, the `AWS::IAM::User` resource type will also be marked as noncompliant in the AWS console.
> **Managed Rules and Global IAM Resource Types**

The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.
Limitations
This rule does not apply to AWS account root user access keys. To delete or rotate your root user access keys, use your root user credentials to sign in to the My Security Credentials page in the AWS Management Console at https://aws.amazon.com/console/.

Identifier: ACCESS_KEYS_ROTATED

Resource Types: AWS::IAM::User

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

maxAccessKeyAge, Type: int, Default: 90

Maximum number of days without rotation. Default 90.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

account-part-of-organizations

Checks if an AWS account is part of AWS Organizations. The rule is NON_COMPLIANT if an AWS account is not part of AWS Organizations or AWS Organizations master account ID does not match rule parameter `MasterAccountId`.

> **Note**
>
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: ACCOUNT_PART_OF_ORGANIZATIONS

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Taipei) Region

Parameters:

MasterAccountId (Optional), Type: String

The master account ID for an AWS account.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

acmpca-certificate-authority-tagged

Checks if AWS Private CA certificate authorities have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: ACMPCA_CERTIFICATE_AUTHORITY_TAGGED

Resource Types: AWS::ACMPCA::CertificateAuthority

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

acm-certificate-expiration-check

Checks if AWS Certificate Manager Certificates in your account are marked for expiration within the specified number of days. Certificates provided by ACM are automatically renewed. ACM does not automatically renew certificates that you import. The rule is NON_COMPLIANT if your certificates are about to expire.

Identifier: ACM_CERTIFICATE_EXPIRATION_CHECK

Resource Types: AWS::ACM::Certificate

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

daysToExpiration (Optional), Type: int, Default: 14

Specify the number of days before the rule flags the ACM Certificate as noncompliant.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

acm-certificate-rsa-check

Checks if RSA certificates managed by AWS Certificate Manager (ACM) have a key length of at least '2048' bits.The rule is NON_COMPLIANT if the minimum key length is less than 2048 bits.

Identifier: ACM_CERTIFICATE_RSA_CHECK

Resource Types: AWS::ACM::Certificate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

acm-pca-root-ca-disabled

Checks if AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Identifier: ACM_PCA_ROOT_CA_DISABLED

Resource Types: AWS::ACMPCA::CertificateAuthority

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

exemptedCAArns (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARN) of CA's that can be enabled. This value can be supplied for other CAs, like specific root CAs or intermediate CA's that can be enabled.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

active-mq-supported-version

Checks if an Amazon MQ ActiveMQ broker is running on a specified minimum supported engine version. The rule is NON_COMPLIANT if the ActiveMQ broker is not running on the minimum supported engine version that you specify.

Identifier: ACTIVE_MQ_SUPPORTED_VERSION

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

supportedEngineVersion, Type: String

String value for the rule to check the minimum supported engine version for the ActiveMQ broker. ActiveMQ brokers use semantic versioning specification: X.Y.Z. X denotes the major version, Y represents the minor version, and Z denotes the patch version.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-desync-mode-check

Checks if an Application Load Balancer (ALB) is configured with a user defined desync mitigation mode. The rule is NON_COMPLIANT if ALB desync mitigation mode does not match with the user defined desync mitigation mode.

Identifier: ALB_DESYNC_MODE_CHECK

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

desyncMode, Type: CSV

> Comma-separated list, in which customers can choose max 2 values among - 'defensive', 'strictest', and 'monitor'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-http-drop-invalid-header-enabled

Checks if rule evaluates AWS Application Load Balancers (ALB) to ensure they are configured to drop http headers. The rule is NON_COMPLIANT if the value of routing.http.drop_invalid_header_fields.enabled is set to false.

Identifier: ALB_HTTP_DROP_INVALID_HEADER_ENABLED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-http-to-https-redirection-check

Checks if HTTP to HTTPS redirection is configured on all HTTP listeners of Application Load Balancers. The rule is NON_COMPLIANT if one or more HTTP listeners of Application Load Balancer do not have HTTP to HTTPS redirection configured. The rule is also NON_COMPLIANT if one of more HTTP listeners have forwarding to an HTTP listener instead of redirection.

Identifier: ALB_HTTP_TO_HTTPS_REDIRECTION_CHECK

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-internal-scheme-check

Checks if an Application Load Balancer scheme is internal. The rule is NON_COMPLIANT if configuration.scheme is not set to internal.

Identifier: ALB_INTERNAL_SCHEME_CHECK

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-listener-tagged

Checks if Application Load Balancer listeners have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: ALB_LISTENER_TAGGED

Resource Types: AWS::ElasticLoadBalancingV2::Listener

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

alb-waf-enabled

Checks if AWS WAF is enabled on Application Load Balancers (ALBs). The rule is NON_COMPLIANT if key: waf.enabled is set to false.

Identifier: ALB_WAF_ENABLED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

wafWebAclIds (Optional), Type: CSV

Comma separated list of web ACL ID (for WAF) or web ACL ARN (for WAFV2) checking for ALB association.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

amplify-app-branch-auto-deletion-enabled

Checks if AWS Amplify apps automatically disconnect a branch in Amplify Hosting when you delete a branch from your Git repository. The rule is NON_COMPLIANT if configuration.EnableBranchAutoDeletion is false.

Identifier: AMPLIFY_APP_BRANCH_AUTO_DELETION_ENABLED

Resource Types: AWS::Amplify::App

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia),

Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

amplify-app-description

Checks if AWS Amplify apps have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: AMPLIFY_APP_DESCRIPTION

Resource Types: AWS::Amplify::App

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

amplify-app-tagged

Checks if AWS Amplify apps have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: AMPLIFY_APP_TAGGED

Resource Types: AWS::Amplify::App

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

amplify-branch-performance-mode-enabled

Checks if AWS Amplify branches have performance mode enabled. The rule is NON_COMPLIANT if configuration.EnablePerformanceMode is false.

Identifier: AMPLIFY_BRANCH_PERFORMANCE_MODE_ENABLED

Resource Types: AWS::Amplify::Branch

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

amplify-branch-tagged

Checks if AWS Amplify branches have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: AMPLIFY_BRANCH_TAGGED

Resource Types: AWS::Amplify::Branch

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gwv2-access-logs-enabled

Checks if Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Identifier: API_GWV2_ACCESS_LOGS_ENABLED

Resource Types: AWS::ApiGatewayV2::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gwv2-authorization-type-configured

Checks if Amazon API Gatewayv2 API routes have an authorization type set. This rule is NON_COMPLIANT if the authorization type is NONE.

Identifier: API_GWV2_AUTHORIZATION_TYPE_CONFIGURED

Resource Types: AWS::ApiGatewayV2::Route

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

authorizationType (Optional), Type: String

Parameter to check API routes' authorization types against. String parameters matching CUSTOM, AWS_IAM, JWT are valid.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-associated-with-waf

Checks if an Amazon API Gateway API stage is using an AWS WAF web access control list (web ACL). The rule is NON_COMPLIANT if an AWS WAF Web ACL is not used or if a used AWS Web ACL does not match what is listed in the rule parameter.

Identifier: API_GW_ASSOCIATED_WITH_WAF

Resource Types: AWS::ApiGateway::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

WebAclArns (Optional), Type: CSV

Comma-separated list of web ACL Amazon Resource Names (ARNs).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-cache-enabled-and-encrypted

Checks if all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in an Amazon API Gateway stage is not configured to cache or the cache is not encrypted.

Identifier: API_GW_CACHE_ENABLED_AND_ENCRYPTED

Resource Types: AWS::ApiGateway::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-endpoint-type-check

Checks if Amazon API Gateway APIs are of the type specified in the rule parameter `endpointConfigurationType`. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Identifier: API_GW_ENDPOINT_TYPE_CHECK

Resource Types: AWS::ApiGateway::RestApi

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

endpointConfigurationTypes, Type: String

> Comma-separated list of allowed endpointConfigurationTypes. Allowed values are REGIONAL, PRIVATE and EDGE.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-execution-logging-enabled

Checks if all methods in Amazon API Gateway stages have logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or if `loggingLevel` is neither ERROR nor INFO.

Identifier: API_GW_EXECUTION_LOGGING_ENABLED

Resource Types: AWS::ApiGateway::Stage, AWS::ApiGatewayV2::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

loggingLevel (Optional), Type: String, Default: ERROR,INFO

Comma-separated list of specific logging levels (for example, ERROR, INFO or ERROR,INFO).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-ssl-enabled

Checks if a REST API stage uses an SSL certificate. The rule is NON_COMPLIANT if the REST API stage does not have an associated SSL certificate.

> **Note**
>
> This rule returns `NOT_APPLICABLE` if the GetIntegration API returns `AWS` as type.

Identifier: API_GW_SSL_ENABLED

Resource Types: AWS::ApiGateway::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

CertificateIDs (Optional), Type: CSV

Comma-separated list of client certificate IDs configured on a REST API stage.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

api-gw-xray-enabled

Checks if AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Identifier: API_GW_XRAY_ENABLED

Resource Types: AWS::ApiGateway::Stage

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "TracingEnabled": BOOLEAN,
   "RestApiId": "my-rest-api-Id",
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-application-description

Checks if AWS AppConfig applications have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: APPCONFIG_APPLICATION_DESCRIPTION

Resource Types: AWS::AppConfig::Application

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-application-tagged

Checks if AWS AppConfig applications have tags. Optionally, you can specify tag keys for the rule to check. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPCONFIG_APPLICATION_TAGGED

Resource Types: AWS::AppConfig::Application

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-configuration-profile-tagged

Checks if AWS AppConfig configuration profiles have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPCONFIG_CONFIGURATION_PROFILE_TAGGED

Resource Types: AWS::AppConfig::ConfigurationProfile

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-configuration-profile-validators-not-empty

Checks if an AWS AppConfig configuration profile includes at least one validator for syntactic or semantic check to ensure the configuration deploy functions as intended. The rule is NON_COMPLIANT if the Validators property is an empty array.

Identifier: APPCONFIG_CONFIGURATION_PROFILE_VALIDATORS_NOT_EMPTY

Resource Types: AWS::AppConfig::ConfigurationProfile

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-deployment-strategy-description

Checks if AWS AppConfig deployment strategies have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: APPCONFIG_DEPLOYMENT_STRATEGY_DESCRIPTION

Resource Types: AWS::AppConfig::DeploymentStrategy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-deployment-strategy-replicate-to-ssm

Checks if AWS AppConfig deployment strategies save the deployment strategy to an AWS Systems Manager (SSM) document. The rule is NON_COMPLIANT if configuration.ReplicateTo is not 'SSM_DOCUMENT'.

Identifier: APPCONFIG_DEPLOYMENT_STRATEGY_REPLICATE_TO_SSM

Resource Types: AWS::AppConfig::DeploymentStrategy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-environment-description

Checks if AWS AppConfig environments have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: APPCONFIG_ENVIRONMENT_DESCRIPTION

Resource Types: AWS::AppConfig::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-environment-tagged

Checks if AWS AppConfig environments have tags. Optionally, you can specify tag keys for the rule to check. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPCONFIG_ENVIRONMENT_TAGGED

Resource Types: AWS::AppConfig::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-extension-association-tagged

Checks if AWS AppConfig extension associations have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPCONFIG_EXTENSION_ASSOCIATION_TAGGED

Resource Types: AWS::AppConfig::ExtensionAssociation

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-freeform-profile-config-storage

Checks if freeform configuration profiles for AWS AppConfig store their configuration data in AWS Secrets Manager or AWS AppConfig hosted configuration store. The rule is NON_COMPLIANT if configuration.LocationUri is not secretsmanager or hosted.

Identifier: APPCONFIG_FREEFORM_PROFILE_CONFIG_STORAGE

Resource Types: AWS::AppConfig::ConfigurationProfile

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appconfig-hosted-configuration-version-description

Checks if AWS AppConfig hosted configuration versions have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: APPCONFIG_HOSTED_CONFIGURATION_VERSION_DESCRIPTION

Resource Types: AWS::AppConfig::HostedConfigurationVersion

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appflow-flow-tagged

Checks if Amazon AppFlow flows have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPFLOW_FLOW_TAGGED

Resource Types: AWS::AppFlow::Flow

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Africa (Cape Town), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appintegrations-event-integration-description

Checks if Amazon AppIntegrations event integrations have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: APPINTEGRATIONS_EVENT_INTEGRATION_DESCRIPTION

Resource Types: AWS::AppIntegrations::EventIntegration

Trigger type: Configuration changes

AWS Region: Only available in Africa (Cape Town), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appintegrations-event-integration-tagged

Checks if Amazon AppIntegrations event integrations have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPINTEGRATIONS_EVENT_INTEGRATION_TAGGED

Resource Types: AWS::AppIntegrations::EventIntegration

Trigger type: Configuration changes

AWS Region: Only available in Africa (Cape Town), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-gateway-route-tagged

Checks if AWS App Mesh gateway routes have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_GATEWAY_ROUTE_TAGGED

Resource Types: AWS::AppMesh::GatewayRoute

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-mesh-deny-tcp-forwarding

Checks if proxies for AWS App Mesh service meshes do not forward TCP traffic directly to services that aren't deployed with a proxy that is defined in the mesh. The rule is NON_COMPLIANT if configuration.Spec.EgressFilter.Type is set to 'ALLOW_ALL'.

Identifier: APPMESH_MESH_DENY_TCP_FORWARDING

Resource Types: AWS::AppMesh::Mesh

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-mesh-tagged

Checks if AWS App Mesh meshes have tags. Optionally, you can specify tag keys for the rule to check. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_MESH_TAGGED

Resource Types: AWS::AppMesh::Mesh

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-route-tagged

Checks if AWS App Mesh routes have tags. Optionally, you can specify tag keys for the rule to check. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_ROUTE_TAGGED

Resource Types: AWS::AppMesh::Route

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-gateway-backend-defaults-tls

Checks if backend defaults for AWS App Mesh virtual gateways require the virtual gateways to communicate with all ports using TLS. The rule is NON_COMPLIANT if configuration.Spec.BackendDefaults.ClientPolicy.Tls.Enforce is false.

Identifier: APPMESH_VIRTUAL_GATEWAY_BACKEND_DEFAULTS_TLS

Resource Types: AWS::AppMesh::VirtualGateway

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-gateway-logging-file-path-exists

Checks if AWS App Mesh virtual gateways have a file path to write access logs to. The rule is NON_COMPLIANT if configuration.Spec.Logging.AccessLog.File.Path does not exist.

Identifier: APPMESH_VIRTUAL_GATEWAY_LOGGING_FILE_PATH_EXISTS

Resource Types: AWS::AppMesh::VirtualGateway

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-gateway-tagged

Checks if AWS App Mesh virtual gateways have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_VIRTUAL_GATEWAY_TAGGED

Resource Types: AWS::AppMesh::VirtualGateway

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-node-backend-defaults-tls-on

Checks if backend defaults for AWS App Mesh virtual nodes require the virtual nodes to communicate with all ports using TLS. The rule is NON_COMPLIANT if configuration.Spec.BackendDefaults.ClientPolicy.Tls.Enforce is false.

Identifier: APPMESH_VIRTUAL_NODE_BACKEND_DEFAULTS_TLS_ON

Resource Types: AWS::AppMesh::VirtualNode

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-node-logging-file-path-exists

Checks if AWS App Mesh virtual nodes have a file path to write access logs to. The rule is NON_COMPLIANT if configuration.Spec.Logging.AccessLog.File.Path does not exist.

Identifier: APPMESH_VIRTUAL_NODE_LOGGING_FILE_PATH_EXISTS

Resource Types: AWS::AppMesh::VirtualNode

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-node-tagged

Checks if AWS App Mesh virtual nodes have tags. Optionally, you can specify tag keys for the rule to check. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_VIRTUAL_NODE_TAGGED

Resource Types: AWS::AppMesh::VirtualNode

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-router-tagged

Checks if AWS App Mesh virtual routers have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_VIRTUAL_ROUTER_TAGGED

Resource Types: AWS::AppMesh::VirtualRouter

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appmesh-virtual-service-tagged

Checks if AWS App Mesh virtual services have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPMESH_VIRTUAL_SERVICE_TAGGED

Resource Types: AWS::AppMesh::VirtualService

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

approved-amis-by-id

Checks if EC2 instances are using specified Amazon Machine Images (AMIs). Specify a list of approved AMI IDs. Running instances with AMIs that are not on this list are NON_COMPLIANT.

Identifier: APPROVED_AMIS_BY_ID

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

amiIds, Type: CSV

Comma-separated list of up to 21 AMI IDs. There is a 1024 characters limit.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

approved-amis-by-tag

Checks if EC2 instances are using specified Amazon Machine Images (AMIs). Specify the tags that identify the AMIs. Running instances with AMIs that don't have at least one of the specified tags are NON_COMPLIANT.

Identifier: APPROVED_AMIS_BY_TAG

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

amisByTagKeyAndValue, Type: StringMap, Default: tag-key:tag-value,other-tag-key

Comma-separated list of up to 10 AMIs tags (tag-key:tag-value). For example, tag-key1 matches AMIs with tag-key1; tag-key2:value2 matches tag-key2 with the value 2.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-service-in-vpc

Checks if AWS App Runner services route egress traffic through custom VPC. The rule is NON_COMPLIANT if configuration.NetworkConfiguration.EgressConfiguration.EgressType is equal to DEFAULT.

Identifier: APPRUNNER_SERVICE_IN_VPC

Resource Types: AWS::AppRunner::Service

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-service-no-public-access

Checks if AWS AppRunner Services are not publicly accessible. The rule is NON_COMPLIANT if service.configuration.NetworkConfiguration.IngressConfiguration.IsPubliclyAccessible is False.

Identifier: APPRUNNER_SERVICE_NO_PUBLIC_ACCESS

Resource Types: AWS::AppRunner::Service

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-service-observability-enabled

Checks if AWS App Runner services have observability enabled. The rule is NON_COMPLIANT if configuration.ObservabilityConfiguration.ObservabilityEnabled is false'.

Identifier: APPRUNNER_SERVICE_OBSERVABILITY_ENABLED

Resource Types: AWS::AppRunner::Service

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-service-tagged

Checks if AWS App Runner services have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPRUNNER_SERVICE_TAGGED

Resource Types: AWS::AppRunner::Service

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-vpc-connector-multi-az

Checks if AWS App Runner Vpc connectors are deployed across multiple Availability Zones. This rule is NON_COMPLIANT if configuration.Subnets are in one Availability Zone.

Identifier: APPRUNNER_VPC_CONNECTOR_MULTI_AZ

Resource Types: AWS::AppRunner::VpcConnector

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

apprunner-vpc-connector-tagged

Checks if AWS App Runner VPC connectors have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: APPRUNNER_VPC_CONNECTOR_TAGGED

Resource Types: AWS::AppRunner::VpcConnector

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appstream-fleet-in-vpc

Checks if Amazon AppStream 2.0 fleets use an Amazon Virtual Private Cloud (Amazon VPC). The rule is NON_COMPLIANT if configuration.VpcConfig does not exist. The rule does not check Elastic fleets.

Identifier: APPSTREAM_FLEET_IN_VPC

Resource Types: AWS::AppStream::Fleet

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appstream-fleet-multi-az

Checks if Amazon AppStream 2.0 fleets in an Amazon Virtual Private Cloud (Amazon VPC) are deployed across multiple Availability Zones. The rule is NON_COMPLIANT if configuration.VpcConfig.SubnetIds are in one Availability Zone.

Identifier: APPSTREAM_FLEET_MULTI_AZ

Resource Types: AWS::AppStream::Fleet

Trigger type: Configuration changes

AWS Region: Only available in US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-associated-with-waf

Checks if AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Identifier: APPSYNC_ASSOCIATED_WITH_WAF

Resource Types: AWS::AppSync::GraphQLApi

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

wafWebAclARNs (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARNs) for authorized web ACLs.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-authorization-check

Checks if an AWS AppSync API is using allowed authorization mechanisms. The rule is NON_COMPLIANT if an unapproved authorization mechanism is being used.

Identifier: APPSYNC_AUTHORIZATION_CHECK

Resource Types: AWS::AppSync::GraphQLApi

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

AllowedAuthorizationTypes, Type: CSV

Comma-separated list of allowed AWS AppSync authorization mechanisms. Allowed values are: 'API_KEY', 'AWS_LAMBDA', 'AWS_IAM', 'OPENID_CONNECT', 'AMAZON_COGNITO_USER_POOLS'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-cache-ct-encryption-at-rest

Checks if an AWS AppSync API cache has encryption at rest enabled. This rule is NON_COMPLIANT if 'AtRestEncryptionEnabled' is false.

Identifier: APPSYNC_CACHE_CT_ENCRYPTION_AT_REST

Resource Types: AWS::AppSync::ApiCache

Trigger type: Configuration changes

AWS Region: Only available in Middle East (Bahrain), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-cache-ct-encryption-in-transit

Checks if an AWS AppSync API cache has encryption in transit enabled. The rule is NON_COMPLIANT if 'TransitEncryptionEnabled' is false.

Identifier: APPSYNC_CACHE_CT_ENCRYPTION_IN_TRANSIT

Resource Types: AWS::AppSync::ApiCache

Trigger type: Configuration changes

AWS Region: Only available in Middle East (Bahrain), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-cache-encryption-at-rest

Checks if an AWS AppSync API cache has encryption at rest enabled. This rule is NON_COMPLIANT if 'AtRestEncryptionEnabled' is false.

Identifier: APPSYNC_CACHE_ENCRYPTION_AT_REST

Resource Types: AWS::AppSync::GraphQLApi

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

appsync-logging-enabled

Checks if an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or if the field logging levels for the AWS AppSync API do not match the values specified in the '`fieldLoggingLevel`' rule parameter.

Identifier: APPSYNC_LOGGING_ENABLED

Resource Types: AWS::AppSync::GraphQLApi

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

fieldLoggingLevel (Optional), Type: CSV

Comma-separated list of field logging levels for the rule to check. For example, "ERROR, INFO".

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-data-catalog-description

Checks if Amazon Athena data catalogs have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: ATHENA_DATA_CATALOG_DESCRIPTION

Resource Types: AWS::Athena::DataCatalog

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-prepared-statement-description

Checks if Amazon Athena prepared statements have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: ATHENA_PREPARED_STATEMENT_DESCRIPTION

Resource Types: AWS::Athena::PreparedStatement

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-workgroup-description

Checks if Amazon Athena workgroups have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: ATHENA_WORKGROUP_DESCRIPTION

Resource Types: AWS::Athena::WorkGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-workgroup-encrypted-at-rest

Checks if an Amazon Athena workgroup is encrypted at rest. The rule is NON_COMPLIANT if encryption of data at rest is not enabled for an Athena workgroup.

Identifier: ATHENA_WORKGROUP_ENCRYPTED_AT_REST

Resource Types: AWS::Athena::WorkGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-workgroup-enforce-workgroup-configuration

Checks if Amazon Athena workgroups using Athena engine enforce workgroup configuration to override client-side settings. The rule is NON_COMPLIANT if configuration.WorkGroupConfiguration.EnforceWorkGroupConfiguration is false.

Identifier: ATHENA_WORKGROUP_ENFORCE_WORKGROUP_CONFIGURATION

Resource Types: AWS::Athena::WorkGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-workgroup-engine-version-auto-upgrade

Checks if Amazon Athena workgroups using Athena engine are configured to auto upgrade. The rule is NON_COMPLIANT if configuration.WorkGroupConfiguration.EngineVersion.SelectedEngineVersion is not 'AUTO'.

Identifier: ATHENA_WORKGROUP_ENGINE_VERSION_AUTO_UPGRADE

Resource Types: AWS::Athena::WorkGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

athena-workgroup-logging-enabled

Checks if Amazon Athena WorkGroup publishes usage metrics to Amazon CloudWatch. The rule is NON_COMPLIANT if an Amazon Athena WorkGroup 'PublishCloudWatchMetricsEnabled' is set to false.

Identifier: ATHENA_WORKGROUP_LOGGING_ENABLED

Resource Types: AWS::Athena::WorkGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Aurora DB clusters. The rule is NON_COMPLIANT if the Amazon Relational Database Service (Amazon RDS) DB Cluster does not have a corresponding recovery point created within the specified time period.

Identifier: AURORA_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Aurora DB clusters for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Aurora DB cluster for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-meets-restore-time-target

Checks if the restore time of Amazon Aurora DB clusters meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Aurora DB Cluster is greater than maxRestoreTime minutes.

Identifier: AURORA_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Aurora DB clusters for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Aurora DB cluster for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-mysql-backtracking-enabled

Checks if an Amazon Aurora MySQL cluster has backtracking enabled. The rule is NON_COMPLIANT if the Aurora cluster uses MySQL and it does not have backtracking enabled.

Identifier: AURORA_MYSQL_BACKTRACKING_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), China (Beijing), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), South America (Sao Paulo), Asia Pacific (Hong Kong), Asia Pacific (Hyderabad), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain) Region

Parameters:

BacktrackWindowInHours (Optional), Type: double

Amount of time in hours (up to 72) to backtrack your Aurora MySQL cluster.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-mysql-cluster-audit-logging

Checks if Amazon Aurora MySQL DB clusters have audit logging enabled. The rule is NON_COMPLIANT if a DB cluster does not have audit logging enabled.

Identifier: AURORA_MYSQL_CLUSTER_AUDIT_LOGGING

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-resources-in-logically-air-gapped-vault

Checks if Amazon Aurora DB clusters are in a logically air-gapped vault. The rule is NON_COMPLIANT if an Amazon Aurora DB cluster is not in a logically air-gapped vault within the specified time period.

Identifier: AURORA_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Aurora DB clusters for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Aurora DB cluster for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

aurora-resources-protected-by-backup-plan

Checks if Amazon Aurora DB clusters are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon Relational Database Service (Amazon RDS) Database Cluster is not protected by a backup plan.

Identifier: AURORA_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Aurora DB clusters for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Aurora DB cluster for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-capacity-rebalancing

Checks if Capacity Rebalancing is enabled for Amazon EC2 Auto Scaling groups that use multiple instance types. The rule is NON_COMPLIANT if capacity Rebalancing is not enabled.

Identifier: AUTOSCALING_CAPACITY_REBALANCING

Resource Types: AWS::AutoScaling::AutoScalingGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-group-elb-healthcheck-required

Checks if your Amazon EC2 Auto Scaling groups that are associated with an Elastic Load Balancer use Elastic Load Balancing health checks. The rule is NON_COMPLIANT if the Amazon EC2 Auto Scaling groups are not using Elastic Load Balancing health checks.

Identifier: AUTOSCALING_GROUP_ELB_HEALTHCHECK_REQUIRED

Resource Types: AWS::AutoScaling::AutoScalingGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Taipei) Region

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
```

```
...
{
   "LoadBalancerNames": "[my-load-balancer-1, my-load-balancer-2, my-load-
balancer-3, ...]",
   "HealthCheckType": HealthCheckType*"
}
...
```

*The valid values are EC2 (default), ELB, and VPC_LATTICE. The VPC_LATTICE health check type is reserved for use with VPC Lattice, which is in preview release and is subject to change. For more information, see Health checks for Auto Scaling instances in the Amazon EC2 Auto Scaling User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-launchconfig-requires-imdsv2

Checks whether only IMDSv2 is enabled. This rule is NON_COMPLIANT if the Metadata version is not included in the launch configuration or if both Metadata V1 and V2 are enabled.

Identifier: AUTOSCALING_LAUNCHCONFIG_REQUIRES_IMDSV2

Resource Types: AWS::AutoScaling::LaunchConfiguration

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-launch-config-hop-limit

Checks the number of network hops that the metadata token can travel. This rule is NON_COMPLIANT if the Metadata response hop limit is greater than 1.

Identifier: AUTOSCALING_LAUNCH_CONFIG_HOP_LIMIT

Resource Types: AWS::AutoScaling::LaunchConfiguration

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-launch-config-public-ip-disabled

Checks if Amazon EC2 Auto Scaling groups have public IP addresses enabled through Launch Configurations. The rule is NON_COMPLIANT if the Launch Configuration for an Amazon EC2 Auto Scaling group has AssociatePublicIpAddress set to 'true'.

Identifier: AUTOSCALING_LAUNCH_CONFIG_PUBLIC_IP_DISABLED

Resource Types: AWS::AutoScaling::LaunchConfiguration

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-launch-template

Checks if an Amazon Elastic Compute Cloud (EC2) Auto Scaling group is created from an EC2 launch template. The rule is NON_COMPLIANT if the scaling group is not created from an EC2 launch template.

Identifier: AUTOSCALING_LAUNCH_TEMPLATE

Resource Types: AWS::AutoScaling::AutoScalingGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-multiple-az

Checks if the Auto Scaling group spans multiple Availability Zones. The rule is NON_COMPLIANT if the Auto Scaling group does not span multiple Availability Zones.

Identifier: AUTOSCALING_MULTIPLE_AZ

Resource Types: AWS::AutoScaling::AutoScalingGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

minAvailabilityZones (Optional), Type: int

Minimum number of expected Availability zones.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

autoscaling-multiple-instance-types

Checks if an Amazon EC2 Auto Scaling group uses multiple instance types. The rule is NON_COMPLIANT if the Amazon EC2 Auto Scaling group has only one instance type defined. This rule does not evaluate attribute-based instance types.

Identifier: AUTOSCALING_MULTIPLE_INSTANCE_TYPES

Resource Types: AWS::AutoScaling::AutoScalingGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

backup-plan-min-frequency-and-min-retention-check

Checks if a backup plan has a backup rule that satisfies the required frequency and retention period. The rule is NON_COMPLIANT if recovery points are not created at least as often as the specified frequency or expire before the specified period.

Identifier: BACKUP_PLAN_MIN_FREQUENCY_AND_MIN_RETENTION_CHECK

Resource Types: AWS::Backup::BackupPlan

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredFrequencyValue (Optional), Type: int, Default: 1

Numerical value for required backup frequency. Maximum of 24 for hours, 31 for days.

requiredRetentionDays (Optional), Type: int, Default: 35

Required retention period in days.

requiredFrequencyUnit (Optional), Type: String, Default: days

Unit of time for required backup frequency. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

backup-recovery-point-encrypted

Checks if a recovery point is encrypted. The rule is NON_COMPLIANT if the recovery point is not encrypted.

Identifier: BACKUP_RECOVERY_POINT_ENCRYPTED

Resource Types: AWS::Backup::RecoveryPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

backup-recovery-point-manual-deletion-disabled

Checks if a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

> **Note**
>
> **Wildcard required for `"Resource"` and `"Principal"` of the Deny statement**
> The rule requires that the `"Resource"` and `"Principal"` of the Deny statement must have a wildcard in the vault access policy. Otherwise, the rule returns NON_COMPLIANT.

Identifier: BACKUP_RECOVERY_POINT_MANUAL_DELETION_DISABLED

Resource Types: AWS::Backup::BackupVault

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

principalArnList (Optional), Type: CSV

Comma-separated list of AWS Identity and Access Management (IAM) Amazon Resource Names (ARNs) for the rule to NOT check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

backup-recovery-point-minimum-retention-check

Checks if a recovery point expires no earlier than after the specified period. The rule is NON_COMPLIANT if the recovery point has a retention point that is less than the required retention period.

Identifier: BACKUP_RECOVERY_POINT_MINIMUM_RETENTION_CHECK

Resource Types: AWS::Backup::RecoveryPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredRetentionDays (Optional), Type: int, Default: 35

Required retention period in days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-compute-environment-enabled

Checks if AWS Batch compute environments are enabled. The rule is NON_COMPLIANT if configuration.State is 'DISABLED'.

Identifier: BATCH_COMPUTE_ENVIRONMENT_ENABLED

Resource Types: AWS::Batch::ComputeEnvironment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-compute-environment-managed

Checks if AWS Batch compute environments are managed. The rule is NON_COMPLIANT if configuration.Type is 'UNMANAGED'.

Identifier: BATCH_COMPUTE_ENVIRONMENT_MANAGED

Resource Types: AWS::Batch::ComputeEnvironment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-compute-environment-tagged

Checks if AWS Batch compute environments have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: BATCH_COMPUTE_ENVIRONMENT_TAGGED

Resource Types: AWS::Batch::ComputeEnvironment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-job-queue-enabled

Checks if AWS Batch job queues are enabled. The rule is NON_COMPLIANT if configuration.State is 'DISABLED'.

Identifier: BATCH_JOB_QUEUE_ENABLED

Resource Types: AWS::Batch::JobQueue

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-job-queue-tagged

Checks if AWS Batch job queues have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: BATCH_JOB_QUEUE_TAGGED

Resource Types: AWS::Batch::JobQueue

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-managed-compute-environment-using-launch-template

Checks if AWS Batch managed compute environments are configured using a launch template. The rule is NON_COMPLIANT if configuration.ComputeResources.LaunchTemplate does not exist.

Identifier: BATCH_MANAGED_COMPUTE_ENVIRONMENT_USING_LAUNCH_TEMPLATE

Resource Types: AWS::Batch::ComputeEnvironment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-managed-compute-env-compute-resources-tagged

Checks if AWS Batch managed compute environments compute resources have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. Tags starting with 'aws:' are not checked.

Identifier: BATCH_MANAGED_COMPUTE_ENV_COMPUTE_RESOURCES_TAGGED

Resource Types: AWS::Batch::ComputeEnvironment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

batch-scheduling-policy-tagged

Checks if AWS Batch scheduling policies have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: BATCH_SCHEDULING_POLICY_TAGGED

Resource Types: AWS::Batch::SchedulingPolicy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

beanstalk-enhanced-health-reporting-enabled

Checks if an AWS Elastic Beanstalk environment is configured for enhanced health reporting. The rule is COMPLIANT if the environment is configured for enhanced health reporting. The rule is NON_COMPLIANT if the environment is configured for basic health reporting.

Identifier: BEANSTALK_ENHANCED_HEALTH_REPORTING_ENABLED

Resource Types: AWS::ElasticBeanstalk::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cassandra-keyspace-tagged

Checks if Amazon Keyspaces (for Apache Cassandra) keyspaces have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: CASSANDRA_KEYSPACE_TAGGED

Resource Types: AWS::Cassandra::Keyspace

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), Middle East (Bahrain), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), Asia Pacific (Hong Kong), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

clb-desync-mode-check

Checks if Classic Load Balancers (CLB) are configured with a user defined Desync mitigation mode. The rule is NON_COMPLIANT if CLB Desync mitigation mode does not match with user defined Desync mitigation mode.

Identifier: CLB_DESYNC_MODE_CHECK

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

desyncMode, Type: CSV

> Comma-separated list of values. You can select a max of two. Valid values include 'Defensive', 'Strictest', and 'Monitor'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

clb-multiple-az

Checks if a Classic Load Balancer spans multiple Availability Zones (AZs). The rule is NON_COMPLIANT if a Classic Load Balancer spans less than 2 AZs or does not span number of AZs mentioned in the `minAvailabilityZones` parameter (if provided).

Identifier: CLB_MULTIPLE_AZ

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

minAvailabilityZones (Optional), Type: int

Desired minimum number of expected AZs. Valid values are between 2 and 10, both inclusive. Default value is 2 if parameter is not specified.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudformation-stack-drift-detection-check

Checks if the actual configuration of a AWS CloudFormation (AWS CloudFormation) stack differs, or has drifted, from the expected configuration. A stack is considered to have drifted if one or more of its resources differ from their expected configuration. The rule and the stack are COMPLIANT when the stack drift status is IN_SYNC. The rule is NON_COMPLIANT if the stack drift status is DRIFTED.

> **Note**
>
> This rule performs the DetectStackDrift operation on each stack in your account. The DetectStackDrift operation can take up to several minutes, depending on the number of resources contained within the stack. Given that the maximum execution time of this rule is limited to 15 mins, it is possible that the rule times out before it completes the evaluation of all the stacks in your account.
> If you encounter this issue, it is suggested that you to restrict the number of stacks in-scope for the rule, using tags. You can do the following:
>
> 1. Divide your stacks into groups, each with a different tag.
> 2. Apply the same tag to all the stacks in that group.
> 3. Have multiple instances of this rule in your account, each scoped by a different tag. This allows each instance of the rule to only process the stacks which have the corresponding tag mentioned in its scope.

Identifier: CLOUDFORMATION_STACK_DRIFT_DETECTION_CHECK

Resource Types: AWS::CloudFormation::Stack

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions except Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Melbourne), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

cloudformationRoleArn, Type: String

The Amazon Resource Name (ARN) of the IAM role with policy permissions to detect drift for AWS CloudFormation stacks. For information on required IAM permissions for the role, see Detecting unmanaged configuration changes to stacks and resources | Considerations when detecting drift in the *AWS CloudFormation User Guide*.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudformation-stack-notification-check

Checks if your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally checks if specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.

Identifier: CLOUDFORMATION_STACK_NOTIFICATION_CHECK

Resource Types: AWS::CloudFormation::Stack

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

snsTopic1 (Optional), Type: String

SNS Topic ARN.

snsTopic2 (Optional), Type: String

SNS Topic ARN.

snsTopic3 (Optional), Type: String

SNS Topic ARN.

snsTopic4 (Optional), Type: String

SNS Topic ARN.

snsTopic5 (Optional), Type: String

SNS Topic ARN.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-accesslogs-enabled

Checks if Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket using standard logging (legacy). The rule is NON_COMPLIANT if a CloudFront distribution does not have legacy logging configured.

Identifier: CLOUDFRONT_ACCESSLOGS_ENABLED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

S3BucketName (Optional), Type: String

The name of the Amazon S3 bucket for storing server access logs.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-associated-with-waf

Checks if Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.

Identifier: CLOUDFRONT_ASSOCIATED_WITH_WAF

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

wafWebAclIds (Optional), Type: CSV

> Comma-separated list of web ACL IDs for WAF or web ACL Amazon Resource Names (ARNs) for WAFV2.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-custom-ssl-certificate

Checks if the certificate associated with an Amazon CloudFront distribution is the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Identifier: CLOUDFRONT_CUSTOM_SSL_CERTIFICATE

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-default-root-object-configured

Checks if an Amazon CloudFront distribution is configured to return a specific object that is the default root object. The rule is NON_COMPLIANT if Amazon CloudFront distribution does not have a default root object configured.

Identifier: CLOUDFRONT_DEFAULT_ROOT_OBJECT_CONFIGURED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-no-deprecated-ssl-protocols

Checks if CloudFront distributions are using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any 'OriginSslProtocols' includes 'SSLv3'.

Identifier: CLOUDFRONT_NO_DEPRECATED_SSL_PROTOCOLS

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-origin-access-identity-enabled

Checks if CloudFront distribution with Amazon S3 Origin type has origin access identity configured. The rule is NON_COMPLIANT if the CloudFront distribution is backed by S3 and any origin type is not OAI configured, or the origin is not an S3 bucket.

> **Note**
>
> The rule does not return `NOT_APPLICABLE` if the origin is not an S3 bucket.

Identifier: CLOUDFRONT_ORIGIN_ACCESS_IDENTITY_ENABLED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-origin-failover-enabled

Checks if an origin group is configured for the distribution of at least two origins in the origin group for Amazon CloudFront. The rule is NON_COMPLIANT if there are no origin groups for the distribution.

Identifier: CLOUDFRONT_ORIGIN_FAILOVER_ENABLED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-s3-origin-access-control-enabled

Checks if an Amazon CloudFront distribution with an Amazon Simple Storage Service (Amazon S3) Origin type has origin access control (OAC) enabled. The rule is NON_COMPLIANT for CloudFront distributions with Amazon S3 origins that don't have OAC enabled.

Identifier: CLOUDFRONT_S3_ORIGIN_ACCESS_CONTROL_ENABLED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-s3-origin-non-existent-bucket

Checks if Amazon CloudFront distributions point to a non-existent S3 bucket. The rule is NON_COMPLIANT if `S3OriginConfig` for a CloudFront distribution points to a non-existent S3 bucket. The rule does not evaluate S3 buckets with static website hosting.

Identifier: CLOUDFRONT_S3_ORIGIN_NON_EXISTENT_BUCKET

Resource Types: AWS::CloudFront::Distribution

Trigger type: Periodic

AWS Region: Only available in China (Beijing), US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-security-policy-check

Checks if Amazon CloudFront distributions are using a minimum security policy and cipher suite of TLSv1.2 or greater for viewer connections. This rule is NON_COMPLIANT for a CloudFront distribution if the minimumProtocolVersion is below TLSv1.2_2018.

Identifier: CLOUDFRONT_SECURITY_POLICY_CHECK

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-sni-enabled

Checks if Amazon CloudFront distributions are using a custom SSL certificate and are configured to use SNI to serve HTTPS requests. The rule is NON_COMPLIANT if a custom SSL certificate is associated but the SSL support method is a dedicated IP address.

Identifier: CLOUDFRONT_SNI_ENABLED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-traffic-to-origin-encrypted

Checks if Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if 'OriginProtocolPolicy' is 'http-only' or if 'OriginProtocolPolicy' is 'match-viewer' and 'ViewerProtocolPolicy' is 'allow-all'.

Identifier: CLOUDFRONT_TRAFFIC_TO_ORIGIN_ENCRYPTED

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudfront-viewer-policy-https

Checks if your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.

Identifier: CLOUDFRONT_VIEWER_POLICY_HTTPS

Resource Types: AWS::CloudFront::Distribution

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-all-read-s3-data-event-check

Checks if an AWS CloudTrail multi-Region trail is enabled and logs all read S3 data events for your buckets. The rule is NON_COMPLIANT if no multi-Region trail logs all read S3 data event types for all current and future S3 buckets.

Identifier: CLOUDTRAIL_ALL_READ_S3_DATA_EVENT_CHECK

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-all-write-s3-data-event-check

Checks if an AWS CloudTrail multi-Region trail is enabled and logs all write S3 data events for your buckets. The rule is NON_COMPLIANT if no multi-Region trail logs all write S3 data event types for all current and future S3 buckets.

Identifier: CLOUDTRAIL_ALL_WRITE_S3_DATA_EVENT_CHECK

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-s3-bucket-access-logging

Checks if the S3 bucket configurations for your AWS CloudTrail logs have Amazon S3 server access logging enabled. The rule is NON_COMPLIANT if at least one S3 bucket for a CloudTrail trail does not have S3 server access logging enabled.

Identifier: CLOUDTRAIL_S3_BUCKET_ACCESS_LOGGING

Resource Types: AWS::CloudTrail::Trail

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-s3-bucket-public-access-prohibited

Checks if the S3 bucket configurations for your AWS CloudTrail logs block public access. The rule is NON_COMPLIANT if at least one S3 bucket for a CloudTrail trail is publicly accessible.

Identifier: CLOUDTRAIL_S3_BUCKET_PUBLIC_ACCESS_PROHIBITED

Resource Types: AWS::CloudTrail::Trail

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-s3-dataevents-enabled

Checks if at least one AWS CloudTrail trail is logging Amazon Simple Storage Service (Amazon S3) data events for all S3 buckets. The rule is NON_COMPLIANT if there are trails or if no trails record S3 data events.

Identifier: CLOUDTRAIL_S3_DATAEVENTS_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

S3BucketNames (Optional), Type: String

> Comma-separated list of S3 bucket names for which data events logging should be enabled. Default behavior checks for all S3 buckets.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-security-trail-enabled

Checks that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

- records global service events
- is a multi-region trail
- has Log file validation enabled
- encrypted with a KMS key
- records events for reads and writes
- records management events

- does not exclude any management events

This rule is NON_COMPLIANT if no trails meet all of the criteria mentioned above.

Identifier: CLOUDTRAIL_SECURITY_TRAIL_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudwatch-alarm-action-check

Checks if CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally checks if any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Identifier: CLOUDWATCH_ALARM_ACTION_CHECK

Resource Types: AWS::CloudWatch::Alarm

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

alarmActionRequired, Type: String, Default: true

Alarms have at least one action.

insufficientDataActionRequired, Type: String, Default: true

Alarms have at least one action when the alarm transitions to the INSUFFICIENT_DATA state from any other state.

okActionRequired, Type: String, Default: false

Alarms have at least one action when the alarm transitions to an OK state from any other state.

action1 (Optional), Type: String

The action to execute, specified as an ARN.

action2 (Optional), Type: String

The action to execute, specified as an ARN.

action3 (Optional), Type: String

The action to execute, specified as an ARN.

action4 (Optional), Type: String

The action to execute, specified as an ARN.

action5 (Optional), Type: String

The action to execute, specified as an ARN.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudwatch-alarm-action-enabled-check

Checks if Amazon CloudWatch alarms actions are in enabled state. The rule is NON_COMPLIANT if the CloudWatch alarms actions are not in enabled state.

Identifier: CLOUDWATCH_ALARM_ACTION_ENABLED_CHECK

Resource Types: AWS::CloudWatch::Alarm

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudwatch-alarm-resource-check

Checks if a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Identifier: CLOUDWATCH_ALARM_RESOURCE_CHECK

Resource Types: AWS::EC2::Instance, AWS::RDS::DBCluster, AWS::S3::Bucket, AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

resourceType, Type: String

AWS resource type. The value can be one of the following: AWS::EC2::Volume, AWS::EC2::Instance, AWS::RDS::DBCluster, or AWS::S3::Bucket.

metricName, Type: String

The name for the metric associated with the alarm (for example, 'CPUUtilization' for EC2 instances).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudwatch-alarm-settings-check

Checks whether CloudWatch alarms with the given metric name have the specified settings.

Identifier: CLOUDWATCH_ALARM_SETTINGS_CHECK

Resource Types: AWS::CloudWatch::Alarm

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

metricName, Type: String

The name for the metric associated with the alarm.

threshold (Optional), Type: int

The value against which the specified statistic is compared.

evaluationPeriods (Optional), Type: int

The number of periods over which data is compared to the specified threshold.

period (Optional), Type: int, Default: 300

The period, in seconds, during which the specified statistic is applied.

comparisonOperator (Optional), Type: String

The operation for comparing the specified statistic and threshold (for example, 'GreaterThanThreshold').

statistic (Optional), Type: String

The statistic for the metric associated with the alarm (for example, 'Average' or 'Sum').

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudwatch-log-group-encrypted

Checks if Amazon CloudWatch Log Groups are encrypted with any AWS KMS key or a specified AWS KMS key Id. The rule is NON_COMPLIANT if a CloudWatch Log Group is not encrypted with a KMS key or is encrypted with a KMS key not supplied in the rule parameter.

Identifier: CLOUDWATCH_LOG_GROUP_ENCRYPTED

Resource Types: AWS::Logs::LogGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Taipei) Region

Parameters:

KmsKeyId (Optional), Type: String

Amazon Resource Name (ARN) of the ID for the KMS key that is used to encrypt the log group.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloud-trail-cloud-watch-logs-enabled

Checks if AWS CloudTrail trails are configured to send logs to CloudWatch logs. The trail is NON_COMPLIANT if the CloudWatchLogsLogGroupArn property of the trail is empty.

Identifier: CLOUD_TRAIL_CLOUD_WATCH_LOGS_ENABLED

Resource Types: AWS::CloudTrail::Trail

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

expectedDeliveryWindowAge (Optional), Type: int

Maximum age in hours of the most recent delivery to CloudWatch logs that satisfies compliance.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloudtrail-enabled

> **Important**
>
> For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different.

Checks if an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Identifier: CLOUD_TRAIL_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

s3BucketName (Optional), Type: String

Name of S3 bucket for CloudTrail to deliver log files to.

snsTopicArn (Optional), Type: String

SNS topic ARN for CloudTrail to use for notifications.

cloudWatchLogsLogGroupArn (Optional), Type: String

CloudWatch log group ARN for CloudTrail to send data to.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloud-trail-encryption-enabled

Checks if AWS CloudTrail is configured to use the server side encryption (SSE) AWS Key Management Service (AWS KMS) encryption. The rule is COMPLIANT if the KmsKeyId is defined.

Identifier: CLOUD_TRAIL_ENCRYPTION_ENABLED

Resource Types: AWS::CloudTrail::Trail

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cloud-trail-log-file-validation-enabled

Checks if AWS CloudTrail creates a signed digest file with logs. AWS recommends that the file validation must be enabled on all trails. The rule is NON_COMPLIANT if the validation is not enabled.

Identifier: CLOUD_TRAIL_LOG_FILE_VALIDATION_ENABLED

Resource Types: AWS::CloudTrail::Trail

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cmk-backing-key-rotation-enabled

Checks if automatic key rotation is enabled for each key and matches to the key ID of the customer created AWS KMS key. The rule is NON_COMPLIANT if the AWS Config recorder role for a resource does not have the kms:DescribeKey permission.

> **Note**
>
> Automatic key rotation is not supported for asymmetric KMS keys, HMAC KMS keys, KMS keys with imported key material, or KMS keys in custom key stores.

Identifier: CMK_BACKING_KEY_ROTATION_ENABLED

Resource Types: AWS::KMS::Key

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (UAE) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-artifact-encryption

Checks if an AWS CodeBuild project has encryption enabled for all of its artifacts. The rule is NON_COMPLIANT if 'encryptionDisabled' is set to 'true' for any primary or secondary (if present) artifact configurations.

Identifier: CODEBUILD_PROJECT_ARTIFACT_ENCRYPTION

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-environment-privileged-check

Checks if an AWS CodeBuild project environment has privileged mode enabled. The rule is NON_COMPLIANT for a CodeBuild project if 'privilegedMode' is set to 'true'.

Identifier: CODEBUILD_PROJECT_ENVIRONMENT_PRIVILEGED_CHECK

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

exemptedProjects (Optional), Type: CSV

> Comma-separated list of CodeBuild project names that are allowed to have 'privilegedMode' with value 'true'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-envvar-awscred-check

Checks if the project contains environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.

Identifier: CODEBUILD_PROJECT_ENVVAR_AWSCRED_CHECK

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-logging-enabled

Checks if an AWS CodeBuild project environment has at least one log option enabled. The rule is NON_COMPLIANT if the status of all present log configurations is set to 'DISABLED'.

Identifier: CODEBUILD_PROJECT_LOGGING_ENABLED

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

s3BucketNames (Optional), Type: String

Comma-separated list of Amazon S3 bucket names that logs should be sent to if S3 logs are configured.

cloudWatchGroupNames (Optional), Type: String

Comma-separated list of Amazon CloudWatch log group names that logs should be be sent to if CloudWatch logs are configured.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-s3-logs-encrypted

Checks if a AWS CodeBuild project configured with Amazon S3 Logs has encryption enabled for its logs. The rule is NON_COMPLIANT if 'encryptionDisabled' is set to 'true' in a S3LogsConfig of a CodeBuild project.

Identifier: CODEBUILD_PROJECT_S3_LOGS_ENCRYPTED

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

exemptedProjects (Optional), Type: CSV

Comma-separated list of CodeBuild project names that are allowed to output unencrypted logs.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-project-source-repo-url-check

Checks if the Bitbucket source repository URL contains sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Identifier: CODEBUILD_PROJECT_SOURCE_REPO_URL_CHECK

Resource Types: AWS::CodeBuild::Project

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codebuild-report-group-encrypted-at-rest

Checks if an AWS CodeBuild report group has encryption at rest setting enabled. The rule is NON_COMPLIANT if 'EncryptionDisabled' is 'true'.

Identifier: CODEBUILD_REPORT_GROUP_ENCRYPTED_AT_REST

Resource Types: AWS::CodeBuild::ReportGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codedeploy-auto-rollback-monitor-enabled

Checks if the deployment group is configured with automatic deployment rollback and deployment monitoring with alarms attached. The rule is NON_COMPLIANT if AutoRollbackConfiguration or AlarmConfiguration has not been configured or is not enabled.

Identifier: CODEDEPLOY_AUTO_ROLLBACK_MONITOR_ENABLED

Resource Types: AWS::CodeDeploy::DeploymentGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codedeploy-deployment-group-auto-rollback-enabled

Checks if AWS CodeDeploy deployment groups have auto rollback configuration enabled. The rule is NON_COMPLIANT if configuration.autoRollbackConfiguration.enabled is false or does not exist.

Identifier: CODEDEPLOY_DEPLOYMENT_GROUP_AUTO_ROLLBACK_ENABLED

Resource Types: AWS::CodeDeploy::DeploymentGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codedeploy-deployment-group-outdated-instances-update

Checks if AWS CodeDeploy deployment groups automatically update outdated instances. The rule is NON_COMPLIANT if configuration.outdatedInstancesStrategy is 'IGNORE'.

Identifier: CODEDEPLOY_DEPLOYMENT_GROUP_OUTDATED_INSTANCES_UPDATE

Resource Types: AWS::CodeDeploy::DeploymentGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codedeploy-ec2-minimum-healthy-hosts-configured

Checks if the deployment group for EC2/On-Premises Compute Platform is configured with a minimum healthy hosts fleet percentage or host count greater than or equal to the input threshold. The rule is NON_COMPLIANT if either is below the threshold.

Identifier: CODEDEPLOY_EC2_MINIMUM_HEALTHY_HOSTS_CONFIGURED

Resource Types: AWS::CodeDeploy::DeploymentGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

minimumHealthyHostsFleetPercent (Optional), Type: int, Default: 66

Minimum percentage of healthy hosts fleet during deployment. Default value is set to 66 percent.

minimumHealthyHostsHostCount (Optional), Type: int, Default: 1

Minimum number of healthy hosts in fleet during deployment. Default value is set to 1.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codedeploy-lambda-allatonce-traffic-shift-disabled

Checks if the deployment group for Lambda Compute Platform is not using the default deployment configuration. The rule is NON_COMPLIANT if the deployment group is using the deployment configuration 'CodeDeployDefault.LambdaAllAtOnce'.

Identifier: CODEDEPLOY_LAMBDA_ALLATONCE_TRAFFIC_SHIFT_DISABLED

Resource Types: AWS::CodeDeploy::DeploymentGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codeguruprofiler-profiling-group-tagged

Checks if Amazon CodeGuru Profiler profiling groups have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: CODEGURUPROFILER_PROFILING_GROUP_TAGGED

Resource Types: AWS::CodeGuruProfiler::ProfilingGroup

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codegururreviewer-repository-association-tagged

Checks if Amazon CodeGuru Reviewer repository associations have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: CODEGURUREVIEWER_REPOSITORY_ASSOCIATION_TAGGED

Resource Types: AWS::CodeGuruReviewer::RepositoryAssociation

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codepipeline-deployment-count-check

Checks if the first deployment stage of AWS CodePipeline performs more than one deployment. Optionally checks if each of the subsequent remaining stages deploy to more than the specified number of deployments (`deploymentLimit`).

Identifier: CODEPIPELINE_DEPLOYMENT_COUNT_CHECK

Resource Types: AWS::CodePipeline::Pipeline

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

deploymentLimit (Optional), Type: int

The maximum number of deployments each stage can perform.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

codepipeline-region-fanout-check

Checks if each stage in the AWS CodePipeline deploys to more than N times the number of the regions the AWS CodePipeline has deployed in all the previous combined stages, where N is the region fanout number. The first deployment stage can deploy to a maximum of one region and the second deployment stage can deploy to a maximum number specified in the `regionFanoutFactor`. If you do not provide a `regionFanoutFactor`, by default the value is three. For example: If 1st deployment stage deploys to one region and 2nd deployment stage deploys to three regions, 3rd deployment stage can deploy to 12 regions, that is, sum of previous stages multiplied by the region fanout (three) number. The rule is NON_COMPLIANT if the deployment is in more than one region in 1st stage or three regions in 2nd stage or 12 regions in 3rd stage.

Identifier: CODEPIPELINE_REGION_FANOUT_CHECK

Resource Types: AWS::CodePipeline::Pipeline

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Middle East (UAE), Europe (Frankfurt), South America (Sao Paulo), Asia Pacific (Hyderabad), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Israel (Tel Aviv), Canada (Central) Region

Parameters:

regionFanoutFactor (Optional), Type: int, Default: 3

> The number of regions the AWS CodePipeline has deployed to in all previous stages is the acceptable number of regions any stage can deploy to.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cognito-user-pool-advanced-security-enabled

Checks if an Amazon Cognito user pool has advanced security enabled. The rule is NON_COMPLIANT if advanced security is not enabled. Optionally, you can specify an advanced security mode for the rule to check.

Identifier: COGNITO_USER_POOL_ADVANCED_SECURITY_ENABLED

Resource Types: AWS::Cognito::UserPool

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hong Kong), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

SecurityMode (Optional), Type: String

> String value of the advanced security mode for the rule to check. If provided, the rule is NON_COMPLIANT if the advanced security mode for user pools does not match this parameter value. Valid values are AUDIT and ENFORCED

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cognito-user-pool-tagged

Checks if Amazon Cognito user pools have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: COGNITO_USER_POOL_TAGGED

Resource Types: AWS::Cognito::UserPool

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

connect-instance-logging-enabled

Checks if Amazon Connect instances have flow logs enabled in an Amazon CloudWatch log group. The rule is NON_COMPLIANT if an Amazon Connect instance does not have flow logs enabled.

Identifier: CONNECT_INSTANCE_LOGGING_ENABLED

Resource Types: AWS::Connect::Instance

Trigger type: Configuration changes

AWS Region: Only available in Africa (Cape Town), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

customerprofiles-object-type-allow-profile-creation

Checks if Amazon Connect Customer Profiles object types allow the creation of a new standard profile if one does not exist. The rule is NON_COMPLIANT if configuration.AllowProfileCreation is false.

Identifier: CUSTOMERPROFILES_OBJECT_TYPE_ALLOW_PROFILE_CREATION

Resource Types: AWS::CustomerProfiles::ObjectType

Trigger type: Configuration changes

AWS Region: Only available in Africa (Cape Town), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

customerprofiles-object-type-tagged

Checks if Amazon Connect Customer Profiles object types have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: CUSTOMERPROFILES_OBJECT_TYPE_TAGGED

Resource Types: AWS::CustomerProfiles::ObjectType

Trigger type: Configuration changes

AWS Region: Only available in Africa (Cape Town), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

custom-eventbus-policy-attached

Checks if Amazon EventBridge custom event buses have a resource-based policy attached. The rule is NON_COMPLIANT if a custom event bus policy does not have an attached resource-based policy.

Identifier: CUSTOM_EVENTBUS_POLICY_ATTACHED

Resource Types: AWS::Events::EventBus

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

custom-schema-registry-policy-attached

Checks if custom Amazon EventBridge schema registries have a resource policy attached. The rule is NON_COMPLIANT for custom schema registries without a resource policy attached.

Identifier: CUSTOM_SCHEMA_REGISTRY_POLICY_ATTACHED

Resource Types: AWS::EventSchemas::Registry

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), Asia Pacific (Hong Kong), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

cw-loggroup-retention-period-check

Checks if an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than `MinRetentionTime`, if specified, or else 365 days.

> **Note**
>
> If the retention setting is "Never expire" for a log group, the rule is marked as COMPLIANT.

Identifier: CW_LOGGROUP_RETENTION_PERIOD_CHECK

Resource Types: AWS::Logs::LogGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (UAE) Region

Parameters:

LogGroupNames (Optional), Type: CSV

A comma-separated list of Log Group names to check the retention period.

MinRetentionTime (Optional), Type: int

Specify the retention time in days. Valid values are: 1, 3, 5, 7, 14, 30, 60, 90, 120, 150, 180, 365, 400, 545, 731, 1827, and 3653. The default retention period is 365 days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

datasync-task-data-verification-enabled

Checks if AWS DataSync tasks have data verification enabled to perform additional verification at the end of your transfer. The rule is NON_COMPLIANT if configuration.Options.VerifyMode is 'NONE'.

Identifier: DATASYNC_TASK_DATA_VERIFICATION_ENABLED

Resource Types: AWS::DataSync::Task

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

datasync-task-logging-enabled

Checks if an AWS DataSync task has Amazon CloudWatch logging enabled. The rule is NON_COMPLIANT if an AWS DataSync task does not have Amazon CloudWatch logging enabled or if the logging level is not equivalent to the logging level that you specify.

Identifier: DATASYNC_TASK_LOGGING_ENABLED

Resource Types: AWS::DataSync::Task

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

logLevel (Optional), Type: String

String value for the logging level. Valid values include: 'BASIC' and 'TRANSFER'. If not specified, the default value is 'BASIC'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

datasync-task-tagged

Checks if AWS DataSync tasks have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: DATASYNC_TASK_TAGGED

Resource Types: AWS::DataSync::Task

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dax-encryption-enabled

Checks if Amazon DynamoDB Accelerator (DAX) clusters are encrypted. The rule is NON_COMPLIANT if a DAX cluster is not encrypted.

Identifier: DAX_ENCRYPTION_ENABLED

Resource Types: AWS::DAX::Cluster

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), China (Beijing), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dax-tls-endpoint-encryption

Checks if your Amazon DynamoDB Accelerator (DAX) cluster has ClusterEndpointEncryptionType set to TLS. The rule is NON_COMPLIANT if a DAX cluster is not encrypted by transport layer security (TLS).

Identifier: DAX_TLS_ENDPOINT_ENCRYPTION

Resource Types: AWS::DAX::Cluster

Trigger type: Periodic

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

db-instance-backup-enabled

Checks if RDS DB instances have backups enabled. Optionally, the rule checks the backup retention period and the backup window.

Identifier: DB_INSTANCE_BACKUP_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

backupRetentionPeriod (Optional), Type: int

Retention period for backups.

backupRetentionMinimum (Optional), Type: int

Minimum retention period for backups.

preferredBackupWindow (Optional), Type: String

Time range in which backups are created.

checkReadReplicas (Optional), Type: boolean

Checks whether RDS DB instances have backups enabled for read replicas.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

desired-instance-tenancy

Checks EC2 instances for a 'tenancy' value. Also checks if AMI IDs are specified to be launched from those AMIs or if Host IDs are launched on those Dedicated Hosts. The rule is COMPLIANT if the instance matches a host and an AMI, if specified, in a list.

Identifier: DESIRED_INSTANCE_TENANCY

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

tenancy, Type: String

Desired tenancy of the instances. Valid values are DEDICATED, HOST and DEFAULT.

imageId (Optional), Type: CSV

The rule evaluates instances launched only from AMIs with the specified IDs. Separate multiple AMI IDs with commas.

hostId (Optional), Type: CSV

The IDs of the EC2 Dedicated Hosts on which the instances are meant to be launched. Separate multiple Host IDs with commas.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

desired-instance-type

Checks if your EC2 instances are of a specific instance type. The rule is NON_COMPLIANT if an EC2 instance is not specified in the parameter list. For a list of supported EC2 instance types, see Instance types in the EC2 User Guide for Linux Instances.

Identifier: DESIRED_INSTANCE_TYPE

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

instanceType, Type: CSV

Comma-separated list of EC2 instance types (for example, "t2.small, m4.large, i2.xlarge").

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-auto-minor-version-upgrade-check

Checks if an AWS Database Migration Service (AWS DMS) replication instance has automatic minor version upgrades enabled. The rule is NON_COMPLIANT if an AWS DMS replication instance is not configured with automatic minor version upgrades.

Identifier: DMS_AUTO_MINOR_VERSION_UPGRADE_CHECK

Resource Types: AWS::DMS::ReplicationInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-endpoint-ssl-configured

Checks if AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.

Context: SSL/TLS connections provide one layer of security by encrypting data that moves between your client and a DB instance. Using server certificate provides an extra layer of security by validating that the connection is being made to an Amazon RDS DB instance. It does so by checking the server certificate that is automatically installed on all DB instances that you provision. By enabling SSL connection on AWS DMS, you protect the confidentiality of the data during the migration.

To configure SSL connection for AWS DMS, see Using SSL/TLS to encrypt a connection to a DB instance or cluster in the *Amazon Relational Database Service User Guide*.

Identifier: DMS_ENDPOINT_SSL_CONFIGURED

Resource Types: AWS::DMS::Endpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-endpoint-tagged

Checks if AWS DMS endpoints have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: DMS_ENDPOINT_TAGGED

Resource Types: AWS::DMS::Endpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-mongo-db-authentication-enabled

Checks if AWS Database Migration Service (AWS DMS) endpoints for MongoDb data stores are enabled for password-based authentication and access control. The rule is NON_COMPLIANT if password-based authentication and access control is not enabled.

Identifier: DMS_MONGO_DB_AUTHENTICATION_ENABLED

Resource Types: AWS::DMS::Endpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-neptune-iam-authorization-enabled

Checks if an AWS Database Migration Service (AWS DMS) endpoint for Amazon Neptune databases is configured with IAM authorization. The rule is NON_COMPLIANT if an AWS DMS endpoint where Neptune is the target has IamAuthEnabled set to false.

Identifier: DMS_NEPTUNE_IAM_AUTHORIZATION_ENABLED

Resource Types: AWS::DMS::Endpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-redis-tls-enabled

Checks if AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.

Identifier: DMS_REDIS_TLS_ENABLED

Resource Types: AWS::DMS::Endpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-replication-not-public

Checks if AWS Database Migration Service (AWS DMS) replication instances are public. The rule is NON_COMPLIANT if PubliclyAccessible field is set to true.

Identifier: DMS_REPLICATION_NOT_PUBLIC

Resource Types: AWS::DMS::ReplicationInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-replication-task-sourcedb-logging

Checks if logging is enabled with a valid severity level for AWS DMS replication tasks of a source database. The rule is NON_COMPLIANT if logging is not enabled or logs for DMS replication tasks of a source database have a severity level that is not valid.

Identifier: DMS_REPLICATION_TASK_SOURCEDB_LOGGING

Resource Types: AWS::DMS::ReplicationTask

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-replication-task-tagged

Checks if AWS DMS replication tasks have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: DMS_REPLICATION_TASK_TAGGED

Resource Types: AWS::DMS::ReplicationTask

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dms-replication-task-targetdb-logging

Checks if logging is enabled with a valid severity level for AWS DMS replication task events of a target database. The rule is NON_COMPLIANT if logging is not enabled or replication task logging of a target database has a severity level that is not valid.

Identifier: DMS_REPLICATION_TASK_TARGETDB_LOGGING

Resource Types: AWS::DMS::ReplicationTask

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-audit-logging-enabled

Checks if an Amazon DocumentDB (with MongoDB compatibility) instance cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if an Amazon DocumentDB instance cluster does not have CloudWatch log export enabled for audit logs.

Identifier: DOCDB_CLUSTER_AUDIT_LOGGING_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-backup-retention-check

Checks if an Amazon Document DB cluster retention period is set to specific number of days. The rule is NON_COMPLIANT if the retention period is less than the value specified by the parameter.

Identifier: DOCDB_CLUSTER_BACKUP_RETENTION_CHECK

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

minimumBackupRetentionPeriod (Optional), Type: int

Minimum days backups should be kept. Valid values 1 to 35, default value is 7. This rule is NON_COMPLIANT if value is greater than 'backupRetentionPeriod'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-deletion-protection-enabled

Checks if an Amazon DocumentDB (with MongoDB compatibility) cluster has deletion protection enabled. The rule is NON_COMPLIANT if an Amazon DocumentDB cluster has the deletionProtection field set to false.

Identifier: DOCDB_CLUSTER_DELETION_PROTECTION_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-encrypted

Checks if storage encryption is enabled for your Amazon DocumentDB (with MongoDB compatibility) clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.

Identifier: DOCDB_CLUSTER_ENCRYPTED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

A comma-separated list of KMS key ARNs to compare with the KmsKeyID of the encrypted cluster.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-encrypted-in-transit

Checks if connections to Amazon DocumentDB clusters are configured to use encryption in transit. The rule is NON_COMPLIANT if the parameter group is not "in-sync", or the TLS parameter is set to either "disabled" or a value in `excludeTlsParameters`.

Identifier: DOCDB_CLUSTER_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RDS::DBCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

excludeTlsParameters (Optional), Type: CSV

> Comma-separated list of TLS cluster parameters for the rule to NOT check. Default value: 'disabled'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

docdb-cluster-snapshot-public-prohibited

Checks if Amazon DocumentDB manual cluster snapshots are public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.

Identifier: DOCDB_CLUSTER_SNAPSHOT_PUBLIC_PROHIBITED

Resource Types: AWS::RDS::DBClusterSnapshot

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Middle East (UAE), Europe (Frankfurt), South America (Sao Paulo), Asia Pacific (Hong Kong), Asia Pacific (Hyderabad), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Europe (Milan), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-autoscaling-enabled

Checks if Amazon DynamoDB tables or global secondary indexes can process read/write capacity using on-demand mode or provisioned mode with auto scaling enabled. The rule is NON_COMPLIANT if either mode is used without auto scaling enabled

Identifier: DYNAMODB_AUTOSCALING_ENABLED

Resource Types: AWS::DynamoDB::Table

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

minProvisionedReadCapacity (Optional), Type: int

The minimum number of units that should be provisioned with read capacity in the Auto Scaling group.

maxProvisionedReadCapacity (Optional), Type: int

The maximum number of units that should be provisioned with read capacity in the Auto Scaling group.

targetReadUtilization (Optional), Type: double

The target utilization percentage for read capacity. Target utilization is expressed in terms of the ratio of consumed capacity to provisioned capacity.

minProvisionedWriteCapacity (Optional), Type: int

The minimum number of units that should be provisioned with write capacity in the Auto Scaling group.

maxProvisionedWriteCapacity (Optional), Type: int

The maximum number of units that should be provisioned with write capacity in the Auto Scaling group.

targetWriteUtilization (Optional), Type: double

The target utilization percentage for write capacity. Target utilization is expressed in terms of the ratio of consumed capacity to provisioned capacity.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-in-backup-plan

Checks whether Amazon DynamoDB table is present in AWS Backup Plans. The rule is NON_COMPLIANT if Amazon DynamoDB tables are not present in any AWS Backup plan.

Identifier: DYNAMODB_IN_BACKUP_PLAN

Resource Types: AWS::DynamoDB::Table

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon DynamoDB Tables within the specified period. The rule is NON_COMPLIANT if the DynamoDB Table does not have a corresponding recovery point created within the specified time period.

Identifier: DYNAMODB_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::DynamoDB::Table

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of the DynamoDB Tables for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

Name of DynamoDB Table for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-meets-restore-time-target

Checks if the restore time of Amazon DynamoDB Tables meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of a DynamoDB Table is greater than maxRestoreTime minutes.

Identifier: DYNAMODB_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::DynamoDB::Table

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of the DynamoDB Tables for the rule to check, in JSON format.

resourceId (Optional), Type: String

Name of DynamoDB Table for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-pitr-enabled

Checks if point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.

Identifier: DYNAMODB_PITR_ENABLED

Resource Types: AWS::DynamoDB::Table

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-resources-protected-by-backup-plan

Checks if Amazon DynamoDB tables are protected by a backup plan. The rule is NON_COMPLIANT if the DynamoDB Table is not covered by a backup plan.

Identifier: DYNAMODB_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::DynamoDB::Table

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for DynamoDB tables for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

Name of DynamoDB table for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-table-deletion-protection-enabled

Checks if an Amazon DynamoDB table have deletion protection set to enabled. The rule is NON_COMPLIANT if the table have deletion protection set to disabled.

Identifier: DYNAMODB_TABLE_DELETION_PROTECTION_ENABLED

Resource Types: AWS::DynamoDB::Table

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-table-encrypted-kms

Checks if Amazon DynamoDB table is encrypted with AWS Key Management Service (KMS). The rule is NON_COMPLIANT if Amazon DynamoDB table is not encrypted with AWS KMS. The rule

is also NON_COMPLIANT if the encrypted AWS KMS key is not present in `kmsKeyArns` input parameter.

Identifier: DYNAMODB_TABLE_ENCRYPTED_KMS

Resource Types: AWS::DynamoDB::Table

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma separated list of AWS KMS key ARNs allowed for encrypting Amazon DynamoDB Tables.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-table-encryption-enabled

Checks if the Amazon DynamoDB tables are encrypted and checks their status. The rule is COMPLIANT if the status is enabled or enabling.

Identifier: DYNAMODB_TABLE_ENCRYPTION_ENABLED

Resource Types: AWS::DynamoDB::Table

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Stockholm), Middle East (Bahrain), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Hong Kong), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Europe (Milan), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

dynamodb-throughput-limit-check

Checks if provisioned DynamoDB throughput is approaching the maximum limit for your account. By default, the rule checks if provisioned throughput exceeds a threshold of 80 percent of your account limits.

Identifier: DYNAMODB_THROUGHPUT_LIMIT_CHECK

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

accountRCUThresholdPercentage (Optional), Type: int, Default: 80

Percentage of provisioned read capacity units for your account. When this value is reached, the rule is marked as noncompliant.

accountWCUThresholdPercentage (Optional), Type: int, Default: 80

Percentage of provisioned write capacity units for your account. When this value is reached, the rule is marked as noncompliant.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-in-backup-plan

Check if Amazon Elastic Block Store (Amazon EBS) volumes are added in backup plans of AWS Backup. The rule is NON_COMPLIANT if Amazon EBS volumes are not included in backup plans.

Identifier: EBS_IN_BACKUP_PLAN

Resource Types: AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Melbourne), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Elastic Block Store (Amazon EBS). The rule is NON_COMPLIANT if the Amazon EBS volume does not have a corresponding recovery point created within the specified time period.

Identifier: EBS_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EBS volumes for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon EBS volume for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-meets-restore-time-target

Checks if the restore time of Amazon Elastic Block Store (Amazon EBS) volumes meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon EBS volume is greater than maxRestoreTime minutes.

Identifier: EBS_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags for Amazon EBS volumes for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon EBS volume for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-optimized-instance

Checks if Amazon EBS optimization is enabled for your Amazon Elastic Compute Cloud (Amazon EC2) instances that can be Amazon EBS-optimized. The rule is NON_COMPLIANT if EBS optimization is not enabled for an Amazon EC2 instance that can be EBS-optimized.

> **Note**
>
> EC2 instances which are EBS-optimized by default always result in rule evaluations returning `COMPLIANT`.

Identifier: EBS_OPTIMIZED_INSTANCE

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-resources-in-logically-air-gapped-vault

Checks if Amazon Elastic Block Store (Amazon EBS) volumes are in a logically air-gapped vault. The rule is NON_COMPLIANT if an Amazon EBS volume is not in a logically air-gapped vault within the specified time period.

Identifier: EBS_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EBS volumes for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon EBS volume for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-resources-protected-by-backup-plan

Checks if Amazon Elastic Block Store (Amazon EBS) volumes are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EBS volume is not covered by a backup plan.

Identifier: EBS_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::EC2::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific

(Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for Amazon EBS volumes for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon EBS volume for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ebs-snapshot-public-restorable-check

Checks if Amazon Elastic Block Store (Amazon EBS) snapshots are not publicly restorable. The rule is NON_COMPLIANT if one or more snapshots with RestorableByUserIds field are set to all, that is, Amazon EBS snapshots are public.

Identifier: EBS_SNAPSHOT_PUBLIC_RESTORABLE_CHECK

Trigger type: Periodic

AWS Region: All supported AWS regions except Europe (Spain) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-capacity-reservation-tagged

Checks if Amazon EC2 capacity reservations have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_CAPACITY_RESERVATION_TAGGED

Resource Types: AWS::EC2::CapacityReservation

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-carrier-gateway-tagged

Checks if Amazon EC2 carrier gateways have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_CARRIER_GATEWAY_TAGGED

Resource Types: AWS::EC2::CarrierGateway

Trigger type: Configuration changes

AWS Region: Only available in Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-client-vpn-connection-log-enabled

Checks if AWS Client VPN endpoint has client connection logging enabled. The rule is NON_COMPLIANT if 'Configuration.ConnectionLogOptions.Enabled' is set to false.

Identifier: EC2_CLIENT_VPN_CONNECTION_LOG_ENABLED

Resource Types: AWS::EC2::ClientVpnEndpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-client-vpn-endpoint-tagged

Checks if Amazon EC2 client VPN endpoints have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_CLIENT_VPN_ENDPOINT_TAGGED

Resource Types: AWS::EC2::ClientVpnEndpoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-client-vpn-not-authorize-all

Checks if the AWS Client VPN authorization rules authorizes connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.

Identifier: EC2_CLIENT_VPN_NOT_AUTHORIZE_ALL

Resource Types: AWS::EC2::ClientVpnEndpoint

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-dhcp-options-tagged

Checks if Amazon EC2 DHCP options have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_DHCP_OPTIONS_TAGGED

Resource Types: AWS::EC2::DHCPOptions

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-ebs-encryption-by-default

Checks if Amazon Elastic Block Store (EBS) encryption is enabled by default. The rule is NON_COMPLIANT if the encryption is not enabled.

Identifier: EC2_EBS_ENCRYPTION_BY_DEFAULT

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-fleet-tagged

Checks if Amazon EC2 fleets have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_FLEET_TAGGED

Resource Types: AWS::EC2::EC2Fleet

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-imdsv2-check

Checks if your Amazon Elastic Compute Cloud (Amazon EC2) instance metadata version is configured with Instance Metadata Service Version 2 (IMDSv2). The rule is NON_COMPLIANT if the HttpTokens is set to optional.

Identifier: EC2_IMDSV2_CHECK

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-detailed-monitoring-enabled

Checks if detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Identifier: EC2_INSTANCE_DETAILED_MONITORING_ENABLED

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-launched-with-allowed-ami

Checks if running or stopped EC2 instances were launched with Amazon Machine Images (AMIs) that meet your Allowed AMIs criteria. The rule is NON_COMPLIANT if an AMI doesn't meet the Allowed AMIs criteria and the Allowed AMIs settings isn't disabled.

Identifier: EC2_INSTANCE_LAUNCHED_WITH_ALLOWED_AMI

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions

Parameters:

InstanceStateNameList (Optional), Type: CSV

> Comma-separate list of Amazon EC2 instance states for the rule to check. Valid values are "running" and "stopped".

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-managed-by-systems-manager

> **Important**
>
> For this rule, the rule identifier (EC2_INSTANCE_MANAGED_BY_SSM) and rule name (ec2-instance-managed-by-systems-manager) are different.

Checks if your Amazon EC2 instances are managed by AWS Systems Manager Agent (SSM Agent). The rule is NON_COMPLIANT if an EC2 instance is running and the SSM Agent is stopped, or if an EC2 instance is running and the SSM Agent is terminated.

> **Note**
>
> The rule will not return NON_COMPLIANT if an EC2 instance is stopped and the SSM Agent is running.

Identifier: EC2_INSTANCE_MANAGED_BY_SSM

Resource Types: AWS::EC2::Instance, AWS::SSM::ManagedInstanceInventory

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-multiple-eni-check

Checks if Amazon Elastic Compute Cloud (Amazon EC2) uses multiple Elastic Network Interfaces (ENIs) or Elastic Fabric Adapters (EFAs). The rule is NON_COMPLIANT an Amazon EC2 instance use multiple network interfaces.

Identifier: EC2_INSTANCE_MULTIPLE_ENI_CHECK

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

NetworkInterfaceIds (Optional), Type: CSV

Comma-separated list of network instance IDs

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "NetworkInterfaces": "[NetworkInterfaceId-1, NetworkInterfaceId-2,
 NetworkInterfaceId-3, ...]"
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-no-public-ip

Checks if EC2 instances have a public IP association. The rule is NON_COMPLIANT if the publicIp field is present in the EC2 instance configuration item. The rule applies only to IPv4.

Context: Public IP addresses can make EC2 instances directly accessible from the internet, which might not always be desirable from a security or compliance standpoint:

- **Security**: In many cases, you might not want your EC2 instances to have public IP addresses unless they need to be publicly accessible. Having a public IP address can expose your EC2 instance to potential security risks, such as unauthorized access or attacks.
- **Compliance**: Various compliance standards such as PCI, DSS, or HIPAA have specific requirements regarding network segmentation and access controls. Ensuring that EC2 instances do not have unnecessary public IP addresses can help ensure compliance with these requirements.
- **Cost Management**: Public IP addresses can incur additional costs, especially if there are EC2 instances continuously associated with them. By identifying EC2 instances with public IPs which do not need them, you can potentially reduce costs.

Identifier: EC2_INSTANCE_NO_PUBLIC_IP

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instance-profile-attached

Checks if an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.

Identifier: EC2_INSTANCE_PROFILE_ATTACHED

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

IamInstanceProfileArnList (Optional), Type: CSV

Comma-separated list of IAM profile Amazon Resource Names (ARNs) that can be attached to Amazon EC2 instances.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Elastic Compute Cloud (Amazon EC2) instances. The rule is NON_COMPLIANT if the Amazon EC2 instance does not have a corresponding recovery point created within the specified time period.

Identifier: EC2_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EC2 instances for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon EC2 instance for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-launch-template-imdsv2-check

Checks if the currently set default version of an Amazon EC2 Launch Template requires new launched instances to use V2 of the Amazon EC2 Instance Metadata Service (IMDSv2). The rule is NON_COMPLIANT if 'Metadata version' is not specified as V2 (IMDSv2).

Identifier: EC2_LAUNCH_TEMPLATE_IMDSV2_CHECK

Resource Types: AWS::EC2::LaunchTemplate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-launch-template-public-ip-disabled

Checks if Amazon EC2 Launch Templates are set to assign public IP addresses to Network Interfaces. The rule is NON_COMPLIANT if the default version of an EC2 Launch Template has at least 1 Network Interface with 'AssociatePublicIpAddress' set to 'true'.

Identifier: EC2_LAUNCH_TEMPLATE_PUBLIC_IP_DISABLED

Resource Types: AWS::EC2::LaunchTemplate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

exemptedLaunchTemplates (Optional), Type: CSV

> Comma-separated list of exempted EC2 Launch Template IDs that are allowed to have Network Interfaces with the AssociatePublicIpAddress value set to 'true'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-launch-template-tagged

Checks if Amazon EC2 launch templates have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_LAUNCH_TEMPLATE_TAGGED

Resource Types: AWS::EC2::LaunchTemplate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud

(US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-applications-blacklisted

Checks if none of the specified applications are installed on the instance. Optionally, specify the version. Newer versions will not be denylisted. Optionally, specify the platform to apply the rule only to instances running that platform.

Identifier: EC2_MANAGEDINSTANCE_APPLICATIONS_BLACKLISTED

Resource Types: AWS::SSM::ManagedInstanceInventory

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

applicationNames, Type: CSV

Comma-separated list of application names. Optionally, specify versions appended with ':' (for example, 'Chrome:0.5.3, Firefox').

> **Note**
>
> The application names must be an exact match. For example, use **`firefox`** on Linux or **`firefox-compat`** on Amazon Linux. In addition, AWS Config does not currently support wildcards for the *applicationNames* parameter (for example, **`firefox*`**).

platformType (Optional), Type: String

Platform type (for example, 'Linux' or 'Windows').

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-applications-required

Checks if all of the specified applications are installed on the instance. Optionally, specify the minimum acceptable version. You can also specify the platform to apply the rule only to instances running that platform.

> **Note**
>
> Ensure that SSM agent is running on the EC2 instance and an association to gather application software inventory is created. The rule returns `NOT_APPLICABLE` if SSM agent is not installed or an association is not yet created or running.

Identifier: EC2_MANAGEDINSTANCE_APPLICATIONS_REQUIRED

Resource Types: AWS::SSM::ManagedInstanceInventory

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

applicationNames, Type: CSV

Comma-separated list of application names. Optionally, specify versions appended with ':' (for example, 'Chrome:0.5.3, Firefox').

> **Note**
>
> The application names must be an exact match. For example, use **`firefox`** on Linux or **`firefox-compat`** on Amazon Linux. In addition, AWS Config does not currently support wildcards for the *applicationNames* parameter (for example, **`firefox*`**).

platformType (Optional), Type: String

Platform type (for example, 'Linux' or 'Windows').

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-association-compliance-status-check

Checks if the status of the AWS Systems Manager association compliance is COMPLIANT or NON_COMPLIANT after the association execution on the instance. The rule is compliant if the field status is COMPLIANT. For more information about associations, see What is an association?.

Identifier: EC2_MANAGEDINSTANCE_ASSOCIATION_COMPLIANCE_STATUS_CHECK

Resource Types: AWS::SSM::AssociationCompliance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-inventory-blacklisted

Checks whether instances managed by Amazon EC2 Systems Manager are configured to collect blacklisted inventory types.

Identifier: EC2_MANAGEDINSTANCE_INVENTORY_BLACKLISTED

Resource Types: AWS::SSM::ManagedInstanceInventory

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

inventoryNames, Type: CSV

Comma separated list of Systems Manager inventory types (for example, 'AWS:Network, AWS:WindowsUpdate').

platformType (Optional), Type: String

Platform type (for example, 'Linux').

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-patch-compliance-status-check

Checks if the compliance status of the AWS Systems Manager patch compliance is COMPLIANT or NON_COMPLIANT after the patch installation on the instance. The rule is compliant if the field status is COMPLIANT.

Identifier: EC2_MANAGEDINSTANCE_PATCH_COMPLIANCE_STATUS_CHECK

Resource Types: AWS::SSM::PatchCompliance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Osaka), Europe (Milan), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-managedinstance-platform-check

Checks whether EC2 managed instances have the desired configurations.

Identifier: EC2_MANAGEDINSTANCE_PLATFORM_CHECK

Resource Types: AWS::SSM::ManagedInstanceInventory

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

platformType, Type: String

Platform type (for example, 'Linux').

platformVersion (Optional), Type: String

Platform version (for example, '2016.09').

agentVersion (Optional), Type: String

Agent version (for example, '2.0.433.0').

platformName (Optional), Type: String

The version of the platform (for example, '2016.09')

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-meets-restore-time-target

Checks if the restore time of Amazon Elastic Compute Cloud (Amazon EC2) instances meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon EC2 instance is greater than maxRestoreTime minutes.

Identifier: EC2_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Amazon EC2 instances for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon EC2 instance for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-network-insights-access-scope-analysis-tagged

Checks if Amazon EC2 network insights access scope analyses have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_NETWORK_INSIGHTS_ACCESS_SCOPE_ANALYSIS_TAGGED

Resource Types: AWS::EC2::NetworkInsightsAccessScopeAnalysis

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-network-insights-access-scope-tagged

Checks if Amazon EC2 network insights access scopes have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_NETWORK_INSIGHTS_ACCESS_SCOPE_TAGGED

Resource Types: AWS::EC2::NetworkInsightsAccessScope

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-network-insights-path-tagged

Checks if Amazon EC2 network insights paths have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_NETWORK_INSIGHTS_PATH_TAGGED

Resource Types: AWS::EC2::NetworkInsightsPath

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-no-amazon-key-pair

Checks if running Amazon Elastic Compute Cloud (EC2) instances are launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.

Identifier: EC2_NO_AMAZON_KEY_PAIR

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-paravirtual-instance-check

Checks if the virtualization type of an EC2 instance is paravirtual. This rule is NON_COMPLIANT for an EC2 instance if 'virtualizationType' is set to 'paravirtual'.

Identifier: EC2_PARAVIRTUAL_INSTANCE_CHECK

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: Only available in China (Beijing), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-prefix-list-tagged

Checks if Amazon EC2 managed prefix lists have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_PREFIX_LIST_TAGGED

Resource Types: AWS::EC2::PrefixList

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-resources-in-logically-air-gapped-vault

Checks if Amazon Elastic Compute Cloud (Amazon EC2) instances are in a logically air-gapped vault. The rule is NON_COMPLIANT if an Amazon EC2 instance is not in a logically air-gapped vault within the specified time period.

Identifier: EC2_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EC2 instances for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon EC2 instance for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-resources-protected-by-backup-plan

Checks if Amazon Elastic Compute Cloud (Amazon EC2) instances are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EC2 instance is not covered by a backup plan.

> **Note**
>
> This rule is only applicable to running Amazon EC2 instances and not to instances that are powered down.

Identifier: EC2_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for Amazon EC2 instances for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon EC2 instance for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-security-group-attached-to-eni

Checks if non-default security groups are attached to elastic network interfaces. The rule is NON_COMPLIANT if the security group is not associated with a network interface.

Identifier: EC2_SECURITY_GROUP_ATTACHED_TO_ENI

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-security-group-attached-to-eni-periodic

Checks if non-default security groups are attached to Elastic network interfaces (ENIs). The rule is NON_COMPLIANT if the security group is not associated with an ENI. Security groups not owned by the calling account evaluate as NOT_APPLICABLE.

> **Note**
>
> This rule reports on the `AWS::EC2::SecurityGroup` resource type. However, in order for the rule to run effectively, you must enable the recording of the `AWS::EC2::NetworkInterface` resource type.

Identifier: EC2_SECURITY_GROUP_ATTACHED_TO_ENI_PERIODIC

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-spot-fleet-request-ct-encryption-at-rest

Checks if Amazon EC2 Spot Fleet requests have encrypted Amazon Elastic Block Store (Amazon EBS) volumes for all launched EC2 instances. The rule is NON_COMPLIANT if any of the EBS volumes are not encrypted at rest.

Identifier: EC2_SPOT_FLEET_REQUEST_CT_ENCRYPTION_AT_REST

Resource Types: AWS::EC2::SpotFleet

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), US East (N. Virginia), Asia Pacific (Seoul), US West (Oregon), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-stopped-instance

Checks if there are Amazon Elastic Compute Cloud (Amazon EC2) instances stopped for more than the allowed number of days. The rule is NON_COMPLIANT if the state of an Amazon EC2 instance

has been stopped for longer than the allowed number of days, or if the amount of time cannot be determined.

Identifier: EC2_STOPPED_INSTANCE

Resource Types: AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except Africa (Cape Town), Middle East (UAE), Asia Pacific (Osaka), Asia Pacific (Melbourne), Europe (Milan), Canada West (Calgary) Region

Parameters:

AllowedDays (Optional), Type: int, Default: 30

The number of days an Amazon EC2 instance can be stopped before the rule is NON_COMPLIANT. The default number of days is 30.

> **Note**
>
> The number of days selected needs to be less than the configured retention period since this rule relies on the historical data collected. For more information about historical data retention, see Deleting AWS Config Data.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-token-hop-limit-check

Checks if an Amazon Elastic Compute Cloud (EC2) instance metadata has a specified token hop limit that is below the desired limit. The rule is NON_COMPLIANT for an instance if it has a hop limit value above the intended limit.

Identifier: EC2_TOKEN_HOP_LIMIT_CHECK

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

tokenHopLimit (Optional), Type: int

The desired token hop limit. Valid values are between 1 and 64, both inclusive. Default value is 1 if parameter is not specified.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-filter-description

Checks if Amazon EC2 traffic mirror filters have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: EC2_TRAFFIC_MIRROR_FILTER_DESCRIPTION

Resource Types: AWS::EC2::TrafficMirrorFilter

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-filter-tagged

Checks if Amazon EC2 traffic mirror filters have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_TRAFFIC_MIRROR_FILTER_TAGGED

Resource Types: AWS::EC2::TrafficMirrorFilter

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-session-description

Checks if Amazon EC2 traffic mirror sessions have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: EC2_TRAFFIC_MIRROR_SESSION_DESCRIPTION

Resource Types: AWS::EC2::TrafficMirrorSession

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia),

Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-session-tagged

Checks if Amazon EC2 traffic mirror sessions have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_TRAFFIC_MIRROR_SESSION_TAGGED

Resource Types: AWS::EC2::TrafficMirrorSession

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-target-description

Checks if Amazon EC2 traffic mirror targets have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: EC2_TRAFFIC_MIRROR_TARGET_DESCRIPTION

Resource Types: AWS::EC2::TrafficMirrorTarget

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-traffic-mirror-target-tagged

Checks if Amazon EC2 traffic mirror targets have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_TRAFFIC_MIRROR_TARGET_TAGGED

Resource Types: AWS::EC2::TrafficMirrorTarget

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-transit-gateway-auto-vpc-attach-disabled

Checks if Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.

Identifier: EC2_TRANSIT_GATEWAY_AUTO_VPC_ATTACH_DISABLED

Resource Types: AWS::EC2::TransitGateway

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-transit-gateway-multicast-domain-tagged

Checks if Amazon EC2 transit gateway multicast domains have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EC2_TRANSIT_GATEWAY_MULTICAST_DOMAIN_TAGGED

Resource Types: AWS::EC2::TransitGatewayMulticastDomain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-volume-inuse-check

Checks if EBS volumes are attached to EC2 instances. Optionally checks if EBS volumes are marked for deletion when an instance is terminated.

The rule is COMPLIANT if an EBS volume is attached to a running EC2 instance. In this case, it is COMPLIANT when the EBS volume is actively in use by an EC2 instance.

The rule is NON_COMPLIANT if an EBS volume is not attached to any EC2 instance or is attached to a stopped or terminated EC2 instance. In this case, it is NON_COMPLIANT when the EBS volume is not actively in use by an EC2 instance.

Identifier: EC2_VOLUME_INUSE_CHECK

Resource Types: AWS::EC2::Volume

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

deleteOnTermination (Optional), Type: boolean

EBS volumes are marked for deletion when an instance is terminated. Possible values: True or False (other input values are marked as NON_COMPLIANT). If set to `True`, the rule is NON_COMPLIANT if a terminated EBS volume is not marked for deletion.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-vpn-connection-logging-enabled

Checks if AWS Site-to-Site VPN connections have Amazon CloudWatch logging enabled for both tunnels. The rule is NON_COMPLIANT if a Site-to-Site VPN connection does not have CloudWatch logging enabled for either or both tunnels.

Identifier: EC2_VPN_CONNECTION_LOGGING_ENABLED

Resource Types: AWS::EC2::VPNConnection

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecr-private-image-scanning-enabled

Checks if a private Amazon Elastic Container Registry (Amazon ECR) repository has image scanning enabled. The rule is NON_COMPLIANT if the private Amazon ECR repository's scan frequency is not

on scan on push or continuous scan. For more information on enabling image scanning, see Image scanning in the *Amazon ECR User Guide*.

Identifier: ECR_PRIVATE_IMAGE_SCANNING_ENABLED

Resource Types: AWS::ECR::Repository

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecr-private-lifecycle-policy-configured

Checks if a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.

Identifier: ECR_PRIVATE_LIFECYCLE_POLICY_CONFIGURED

Resource Types: AWS::ECR::Repository

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecr-private-tag-immutability-enabled

Checks if a private Amazon Elastic Container Registry (ECR) repository has tag immutability enabled. This rule is NON_COMPLIANT if tag immutability is not enabled for the private ECR repository.

Identifier: ECR_PRIVATE_TAG_IMMUTABILITY_ENABLED

Resource Types: AWS::ECR::Repository

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecr-repository-cmk-encryption-enabled

Checks if ECR repository is encrypted at rest using customer-managed KMS key. This rule is NON_COMPLIANT if the repository is encrypted using AES256 or the default KMS key ('aws/ecr').

Identifier: ECR_REPOSITORY_CMK_ENCRYPTION_ENABLED

Resource Types: AWS::ECR::Repository

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of KMS key Amazon Resource Names (ARNs) intended to encrypt the ECR repository.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecr-repository-tagged

Checks if Amazon ECR repositories have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: ECR_REPOSITORY_TAGGED

Resource Types: AWS::ECR::Repository

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-awsvpc-networking-enabled

Checks if the networking mode for active ECSTaskDefinitions is set to 'awsvpc'. This rule is NON_COMPLIANT if active ECSTaskDefinitions is not set to 'awsvpc'.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_AWSVPC_NETWORKING_ENABLED

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-containers-nonprivileged

Checks if the privileged parameter in the container definition of ECSTaskDefinitions is set to 'true'. The rule is NON_COMPLIANT if the privileged parameter is 'true'.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_CONTAINERS_NONPRIVILEGED

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-containers-readonly-access

Checks if Amazon Elastic Container Service (Amazon ECS) Containers only have read-only access to its root filesystems. The rule is NON_COMPLIANT if the readonlyRootFilesystem parameter in the container definition of ECSTaskDefinitions is set to 'false'.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_CONTAINERS_READONLY_ACCESS

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-container-insights-enabled

Checks if Amazon Elastic Container Service clusters have container insights enabled. The rule is NON_COMPLIANT if container insights are not enabled.

Identifier: ECS_CONTAINER_INSIGHTS_ENABLED

Resource Types: AWS::ECS::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-fargate-latest-platform-version

Checks if ECS Fargate services is set to the latest platform version. The rule is NON_COMPLIANT if PlatformVersion for the Fargate launch type is not set to LATEST, or if neither latestLinuxVersion nor `latestWindowsVersion` are provided as parameters.

Identifier: ECS_FARGATE_LATEST_PLATFORM_VERSION

Resource Types: AWS::ECS::Service

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

latestLinuxVersion (Optional), Type: String

Latest Linux supported 'PlatformVersion' in semantic versioning (SemVer) format. Parameter may be needed if Fargate was deployed and the 'PlatformVersion' was explicitly specified or CodeDeploy is used as the 'DeploymentController'

latestWindowsVersion (Optional), Type: String

Latest Windows supported 'PlatformVersion' in semantic versioning (SemVer) format. Parameter may be needed if Fargate was deployed and the 'PlatformVersion' was explicitly specified or CodeDeploy is used as the 'DeploymentController'

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-no-environment-secrets

Checks if secrets are passed as container environment variables. The rule is NON_COMPLIANT if 1 or more environment variable key matches a key listed in the '`secretKeys`' parameter (excluding environmental variables from other locations such as Amazon S3).

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_NO_ENVIRONMENT_SECRETS

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

secretKeys, Type: CSV

Comma-separated list of key names to search for in the environment variables of container definitions within Task Definitions. Extra spaces will be removed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-log-configuration

Checks if logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_TASK_DEFINITION_LOG_CONFIGURATION

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-memory-hard-limit

Checks if Amazon Elastic Container Service (ECS) task definitions have a set memory limit for its container definitions. The rule is NON_COMPLIANT for a task definition if the 'memory' parameter is absent for one container definition.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_TASK_DEFINITION_MEMORY_HARD_LIMIT

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-network-mode-not-host

Checks if the latest active revision of Amazon ECS task definitions use host network mode. The rule is NON_COMPLIANT if the latest active revision of the ECS task definition uses host network mode.

Identifier: ECS_TASK_DEFINITION_NETWORK_MODE_NOT_HOST

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-nonroot-user

Checks if ECSTaskDefinitions specify a user for Amazon Elastic Container Service (Amazon ECS) EC2 launch type containers to run on. The rule is NON_COMPLIANT if the 'user' parameter is not present or set to 'root'.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_TASK_DEFINITION_NONROOT_USER

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-pid-mode-check

Checks if ECSTaskDefinitions are configured to share a host's process namespace with its Amazon Elastic Container Service (Amazon ECS) containers. The rule is NON_COMPLIANT if the pidMode parameter is set to 'host'.

> **Note**
>
> This rule only evaluates the latest active revision of an Amazon ECS task definition.

Identifier: ECS_TASK_DEFINITION_PID_MODE_CHECK

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ecs-task-definition-user-for-host-mode-check

Checks if Amazon ECS task definitions with host network mode have privileged OR nonroot in the container definition. The rule is NON_COMPLIANT if the latest active revision of a task definition has privileged=false (or is null) AND user=root (or is null).

> **Important**
>
> **Only one condition needs to be met for the rule to return compliant**
> The rule is COMPLIANT in any of following scenarios:
>
> - If the network mode is not set to host,
> - If the latest active revision of a task definition has privileged=true,
> - If the latest active revision of a task definition has a user that is not the root.
>
> This means that only one of these conditions need to be met for the rule to return compliant. To check specifically if a task definition has privileged=true, see ecs-containers-nonprivileged. To check specifically if a task definition has a user that is not the root, see ecs-task-definition-nonroot-user.

Identifier: ECS_TASK_DEFINITION_USER_FOR_HOST_MODE_CHECK

Resource Types: AWS::ECS::TaskDefinition

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Taipei) Region

Parameters:

SkipInactiveTaskDefinitions (Optional), Type: boolean

Boolean flag to not check INACTIVE Amazon EC2 task definitions. If set to 'true', the rule won't evaluate INACTIVE Amazon EC2 task definitions. If set to 'false', the rule will evaluate the latest revision of INACTIVE Amazon EC2 task definitions.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-access-point-enforce-root-directory

Checks if Amazon Elastic File System (Amazon EFS) access points are configured to enforce a root directory. The rule is NON_COMPLIANT if the value of 'Path' is set to '/' (default root directory of the file system).

Identifier: EFS_ACCESS_POINT_ENFORCE_ROOT_DIRECTORY

Resource Types: AWS::EFS::AccessPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

approvedDirectories (Optional), Type: CSV

> Comma-separated list of subdirectory paths that are approved for Amazon EFS access point root directory enforcement.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-access-point-enforce-user-identity

Checks if Amazon Elastic File System (Amazon EFS) access points are configured to enforce a user identity. The rule is NON_COMPLIANT if 'PosixUser' is not defined or if parameters are provided and there is no match in the corresponding parameter.

Identifier: EFS_ACCESS_POINT_ENFORCE_USER_IDENTITY

Resource Types: AWS::EFS::AccessPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

approvedUids (Optional), Type: CSV

Comma-separated list of POSIX user ID that are approved for EFS access point user enforcement.

approvedGids (Optional), Type: CSV

Comma-separated list of POSIX group IDs that are approved for EFS access point user enforcement.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-automatic-backups-enabled

Checks if an Amazon Elastic File System (Amazon EFS) file system has automatic backups enabled. The rule is NON_COMPLIANT if `BackupPolicy.Status` is set to DISABLED.

Identifier: EFS_AUTOMATIC_BACKUPS_ENABLED

Resource Types: AWS::EFS::FileSystem

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-encrypted-check

Checks if Amazon Elastic File System (Amazon EFS) is configured to encrypt the file data using AWS Key Management Service (AWS KMS). The rule is NON_COMPLIANT if the encrypted key is set to false on `DescribeFileSystems` or if the `KmsKeyId` key on `DescribeFileSystems` does not match the `KmsKeyId` parameter.

Identifier: EFS_ENCRYPTED_CHECK

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

KmsKeyId (Optional), Type: String

Amazon Resource Name (ARN) of the KMS key that is used to encrypt the EFS file system.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-filesystem-ct-encrypted

Checks if Amazon Elastic File System (Amazon EFS) encrypts data with AWS Key Management Service (AWS KMS). The rule is NON_COMPLIANT if a file system is not encrypted. Optionally, you can check if a file system is not encrypted with specified KMS keys.

Identifier: EFS_FILESYSTEM_CT_ENCRYPTED

Resource Types: AWS::EFS::FileSystem

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

kmsKeyArns (Optional), Type: String

(Optional) Comma-separated list of Amazon Resource Names (ARNs) for AWS KMS keys. If provided, the rule checks if the specified KMS keys do not encrypt an Amazon EFS file system.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-in-backup-plan

Checks if Amazon Elastic File System (Amazon EFS) file systems are added in the backup plans of AWS Backup. The rule is NON_COMPLIANT if EFS file systems are not included in the backup plans.

Identifier: EFS_IN_BACKUP_PLAN

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Elastic File System (Amazon EFS) File Systems. The rule is NON_COMPLIANT if the Amazon EFS File System does not have a corresponding Recovery Point created within the specified time period.

Identifier: EFS_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EFS File Systems for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of EFS File System for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-meets-restore-time-target

Checks if the restore time of Amazon Elastic File System (Amazon EFS) File Systems meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon EFS File System is greater than maxRestoreTime minutes.

Identifier: EFS_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Amazon EFS File Systems for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of EFS File System for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-mount-target-public-accessible

Checks if an Amazon Elastic File System (Amazon EFS) mount target is not associated with a public subnet. The rule is NON-COMPLIANT if the Amazon EFS mount target is associated with a public subnet.

Identifier: EFS_MOUNT_TARGET_PUBLIC_ACCESSIBLE

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-resources-in-logically-air-gapped-vault

Checks if Amazon Elastic File System (Amazon EFS) File Systems are in a logically air-gapped vault. The rule is NON_COMPLIANT if an Amazon EFS File System is not in a logically air-gapped vault within the specified time period.

Identifier: EFS_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon EFS File Systems for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of EFS File System for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

efs-resources-protected-by-backup-plan

Checks if Amazon Elastic File System (Amazon EFS) File Systems are protected by a backup plan. The rule is NON_COMPLIANT if the EFS File System is not covered by a backup plan.

Identifier: EFS_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::EFS::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for EFS File Systems for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of the EFS File System for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eip-attached

Checks if all Elastic IP addresses that are allocated to an AWS account are attached to EC2 instances or in-use elastic network interfaces. The rule is NON_COMPLIANT if the 'AssociationId' is null for the Elastic IP address.

> **Note**
>
> Results might take up to 6 hours to become available after an evaluation occurs.

Identifier: EIP_ATTACHED

Resource Types: AWS::EC2::EIP

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE) Region

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "InstanceId": "my-instance-Id"
}
```

```
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-cluster-logging-enabled

Checks if an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.

Identifier: EKS_CLUSTER_LOGGING_ENABLED

Resource Types: AWS::EKS::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-cluster-log-enabled

Checks if an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled or if logging is not enabled with the log type mentioned.

Identifier: EKS_CLUSTER_LOG_ENABLED

Resource Types: AWS::EKS::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

logTypes (Optional), Type: CSV

> Comma-separated list of EKS Cluster control plane log types for the rule to check. Valid values: "api", "audit", "authenticator", "controllerManager", "scheduler

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-cluster-oldest-supported-version

Checks if an Amazon Elastic Kubernetes Service (EKS) cluster is running the oldest supported version. The rule is NON_COMPLIANT if an EKS cluster is running oldest supported version (equal to the parameter '`oldestVersionSupported`').

Identifier: EKS_CLUSTER_OLDEST_SUPPORTED_VERSION

Resource Types: AWS::EKS::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

oldestVersionSupported, Type: String

Value of the oldest version of Kubernetes supported on AWS.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-cluster-secrets-encrypted

Checks if Amazon EKS clusters are configured to have Kubernetes secrets encrypted using AWS KMS. The rule is NON_COMPLIANT if an EKS cluster does not have an encryptionConfig resource or if encryptionConfig does not name secrets as a resource.

Identifier: EKS_CLUSTER_SECRETS_ENCRYPTED

Resource Types: AWS::EKS::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of KMS key Amazon Resource Names (ARNs) that are approved for EKS usage.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-cluster-supported-version

Checks if an Amazon Elastic Kubernetes Service (EKS) cluster is running a supported Kubernetes version. This rule is NON_COMPLIANT if an EKS cluster is running an unsupported version (less than the parameter '`oldestVersionSupported`').

Identifier: EKS_CLUSTER_SUPPORTED_VERSION

Resource Types: AWS::EKS::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

oldestVersionSupported, Type: String

Value of the oldest version of Kubernetes supported on AWS.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-endpoint-no-public-access

Checks if the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Identifier: EKS_ENDPOINT_NO_PUBLIC_ACCESS

Resource Types: AWS::EKS::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

eks-secrets-encrypted

Checks if Amazon Elastic Kubernetes Service clusters are configured to have Kubernetes secrets encrypted using AWS Key Management Service (KMS) keys.

- This rule is COMPLIANT if an EKS cluster has an encryptionConfig with secrets as one of the resources.
- This rule is also COMPLIANT if the key used to encrypt EKS secrets matches with the parameter.
- This rule is NON_COMPLIANT if an EKS cluster does not have an encryptionConfig or if the encryptionConfig resources do not include secrets.
- This rule is also NON_COMPLIANT if the key used to encrypt EKS secrets does not match with the parameter.

Identifier: EKS_SECRETS_ENCRYPTED

Resource Types: AWS::EKS::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma separated list of Amazon Resource Name (ARN) of the KMS key that should be used for encrypted secrets in an EKS cluster.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-auto-minor-version-upgrade-check

Checks if Amazon ElastiCache clusters have auto minor version upgrades enabled. The rule is NON_COMPLIANT for an ElastiCache cluster if it is using the Redis or Valkey engine and 'AutoMinorVersionUpgrade' is not set to 'true'.

Identifier: ELASTICACHE_AUTO_MINOR_VERSION_UPGRADE_CHECK

Resource Types: AWS::ElastiCache::CacheCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-rbac-auth-enabled

Checks if Amazon ElastiCache replication groups have RBAC authentication enabled. The rule is NON_COMPLIANT if the Redis version is 6 or above and 'UserGroupIds' is missing, empty, or does not match an entry provided by the '`allowedUserGroupIDs`' parameter.

Identifier: ELASTICACHE_RBAC_AUTH_ENABLED

Resource Types: AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

allowedUserGroupIDs (Optional), Type: CSV

A comma-separated list of User Group IDs that are approved for ElastiCache replication group access.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-redis-cluster-automatic-backup-check

Check if the Amazon ElastiCache Redis clusters have automatic backup turned on. The rule is NON_COMPLIANT if the SnapshotRetentionLimit for Redis cluster is less than the SnapshotRetentionPeriod parameter. For example: If the parameter is 15 then the rule is non-compliant if the snapshotRetentionPeriod is between 0-15.

Identifier: ELASTICACHE_REDIS_CLUSTER_AUTOMATIC_BACKUP_CHECK

Resource Types: AWS::ElastiCache::CacheCluster, AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

snapshotRetentionPeriod (Optional), Type: int, Default: 15

Minimum snapshot retention period in days for Redis cluster. Default is 15 days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-repl-grp-auto-failover-enabled

Checks if Amazon ElastiCache Redis replication groups have automatic failover enabled. The rule is NON_COMPLIANT for an ElastiCache replication group if ‘AutomaticFailover’ is not set to ‘enabled’.

Identifier: ELASTICACHE_REPL_GRP_AUTO_FAILOVER_ENABLED

Resource Types: AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-repl-grp-encrypted-at-rest

Checks if Amazon ElastiCache replication groups have encryption-at-rest enabled. The rule is NON_COMPLIANT for an ElastiCache replication group if 'AtRestEncryptionEnabled' is disabled or if the KMS key ARN does not match the approvedKMSKeyArns parameter.

Identifier: ELASTICACHE_REPL_GRP_ENCRYPTED_AT_REST

Resource Types: AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

approvedKMSKeyIds (Optional), Type: CSV

Comma-separated list of KMS Key IDs that are approved for ElastiCache usage.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-repl-grp-encrypted-in-transit

Checks if Amazon ElastiCache replication groups have encryption-in-transit enabled. The rule is NON_COMPLIANT for an ElastiCache replication group if 'TransitEncryptionEnabled' is set to 'false'.

Identifier: ELASTICACHE_REPL_GRP_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-repl-grp-redis-auth-enabled

Checks if Amazon ElastiCache replication groups have Redis AUTH enabled. The rule is NON_COMPLIANT for an ElastiCache replication group if the Redis version of its nodes is below 6 (Version 6+ use Redis ACLs) and 'AuthToken' is missing or is empty/null.

Identifier: ELASTICACHE_REPL_GRP_REDIS_AUTH_ENABLED

Resource Types: AWS::ElastiCache::ReplicationGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-subnet-group-check

Checks if Amazon ElastiCache clusters are configured with a custom subnet group. The rule is NON_COMPLIANT for an ElastiCache cluster if it is using a default subnet group.

Identifier: ELASTICACHE_SUBNET_GROUP_CHECK

Resource Types: AWS::ElastiCache::CacheCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticache-supported-engine-version

Checks if ElastiCache clusters are running a version greater or equal to the recommended engine version. The rule is NON_COMPLIANT if the 'EngineVersion' for an ElastiCache cluster is less than the specified recommended version for its given engine.

Identifier: ELASTICACHE_SUPPORTED_ENGINE_VERSION

Resource Types: AWS::ElastiCache::CacheCluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

latestMemcachedVersion, Type: String

The latest recommended engine version for Memcached. Valid values are in semantic versioning (SemVer) format with 3-component number for major, minor, and patch versions (for example, 1.6.6, not 1.6).

latestRedisVersion, Type: String

The latest recommended engine version for Redis. Valid values are in semantic versioning (SemVer) format with 3-component number for major, minor, and patch versions (for example, 7.0.5, not 7.0).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticbeanstalk-application-description

Checks if AWS Elastic Beanstalk applications have a description. The rule is NON_COMPLIANT if configuration.description does not exist or is an empty string.

Identifier: ELASTICBEANSTALK_APPLICATION_DESCRIPTION

Resource Types: AWS::ElasticBeanstalk::Application

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticbeanstalk-application-version-description

Checks if AWS Elastic Beanstalk application versions have a description. The rule is NON_COMPLIANT if configuration.description does not exist or is an empty string.

Identifier: ELASTICBEANSTALK_APPLICATION_VERSION_DESCRIPTION

Resource Types: AWS::ElasticBeanstalk::ApplicationVersion

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticbeanstalk-environment-description

Checks if AWS Elastic Beanstalk environments have a description. The rule is NON_COMPLIANT if configuration.description does not exist or is an empty string.

Identifier: ELASTICBEANSTALK_ENVIRONMENT_DESCRIPTION

Resource Types: AWS::ElasticBeanstalk::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticsearch-encrypted-at-rest

Checks if Amazon OpenSearch Service (previously called Elasticsearch) domains have encryption at rest configuration enabled. The rule is NON_COMPLIANT if the EncryptionAtRestOptions field is not enabled.

Identifier: ELASTICSEARCH_ENCRYPTED_AT_REST

Resource Types: AWS::Elasticsearch::Domain

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticsearch-in-vpc-only

Checks if Amazon OpenSearch Service (previously called Elasticsearch) domains are in Amazon Virtual Private Cloud (Amazon VPC). The rule is NON_COMPLIANT if an OpenSearch Service domain endpoint is public.

Identifier: ELASTICSEARCH_IN_VPC_ONLY

Resource Types: AWS::Elasticsearch::Domain

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticsearch-logs-to-cloudwatch

Checks if Amazon OpenSearch Service domains are configured to send logs to Amazon CloudWatch Logs. The rule is COMPLIANT if a log is enabled for an Amazon ES domain. This rule is NON_COMPLIANT if logging is not configured.

Identifier: ELASTICSEARCH_LOGS_TO_CLOUDWATCH

Resource Types: AWS::Elasticsearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

logTypes (Optional), Type: CSV

Comma-separated list of logs that are enabled. Valid values are 'search', 'index', 'error'.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration

schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "LogPublishingOptions": "{Key : Value, ...}"*
}
...
```

*An object with one or more of the following keys: `SEARCH_SLOW_LOGS`, `ES_APPLICATION_LOGS`, `INDEX_SLOW_LOGS`, `AUDIT_LOGS`, depending on the types of logs you want to publish. Each key needs a valid `LogPublishingOption` value.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elasticsearch-node-to-node-encryption-check

Check if OpenSearch Service (previously called Elasticsearch) nodes are encrypted end to end. The rule is NON_COMPLIANT if the node-to-node encryption is not enabled on the domain.

Identifier: ELASTICSEARCH_NODE_TO_NODE_ENCRYPTION_CHECK

Resource Types: AWS::Elasticsearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration

schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "NodeToNodeEncryptionOptions": BOOLEAN
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elastic-beanstalk-logs-to-cloudwatch

Checks if AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Identifier: ELASTIC_BEANSTALK_LOGS_TO_CLOUDWATCH

Resource Types: AWS::ElasticBeanstalk::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

RetentionInDays (Optional), Type: String

> Checks the number of days to keep log events before they expire. Valid values are: 1, 3, 5, 7, 14, 30, 60, 90, 120, 150, 180, 365, 400, 545, 731, 1827, 3653. The rule is NON_COMPLIANT if the value of `logs.RetentionInDays` does not match this parameter.

DeleteOnTerminate (Optional), Type: String

Checks if logs are configured to be deleted upon termination of the environment. Valid values are `true` or `false`. The rule is NON_COMPLIANT if the value of `logs.DeleteOnTerminate` does not match this parameter.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elastic-beanstalk-managed-updates-enabled

Checks if managed platform updates in an AWS Elastic Beanstalk environment is enabled. The rule is COMPLIANT if the value for `ManagedActionsEnabled` is set to true. The rule is NON_COMPLIANT if the value for `ManagedActionsEnabled` is set to false, or if a parameter is provided and its value does not match the existing configurations.

Identifier: ELASTIC_BEANSTALK_MANAGED_UPDATES_ENABLED

Resource Types: AWS::ElasticBeanstalk::Environment

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

UpdateLevel (Optional), Type: String

Indicates whether update levels are set to 'minor' version updates or a 'patch' version updates.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elbv2-acm-certificate-required

Checks if Application Load Balancers and Network Load Balancers have listeners that are configured to use certificates from AWS Certificate Manager (ACM). This rule is NON_COMPLIANT if at least 1 load balancer has at least 1 listener that is configured without a certificate from ACM or is configured with a certificate different from an ACM certificate.

Identifier: ELBV2_ACM_CERTIFICATE_REQUIRED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

AcmCertificatesAllowed (Optional), Type: CSV

Comma-separated list of certificate Amazon Resource Names (ARNs).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elbv2-multiple-az

Checks if an Elastic Load Balancer V2 (Application, Network, or Gateway Load Balancer) is mapped to multiple Availability Zones (AZs). The rule is NON_COMPLIANT if an Elastic Load Balancer V2 is mapped to less than 2 AZs. For more information, see Availability Zones for your Application Load Balancer.

Identifier: ELBV2_MULTIPLE_AZ

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

minAvailabilityZones (Optional), Type: int

Minimum number of expected AZs (between 2 and 10 inclusive).

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elbv2-predefined-security-policy-ssl-check

Checks if listeners for Application Load Balancers (ALBs) or Network Load Balancers (NLBs) use certain security policies. The rule is NON_COMPLIANT if an HTTPS listener for an ALB or a TLS listener for a NLB does not use the security policies you specify.

Identifier: ELBV2_PREDEFINED_SECURITY_POLICY_SSL_CHECK

Resource Types: AWS::ElasticLoadBalancingV2::Listener

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

sslPolicies, Type: CSV

Comma-separated list of SSL security policies for the rule to check. For example, "ELBSecurityPolicy-TLS13-1-2-2021-06".

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-acm-certificate-required

Checks if the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. This rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Identifier: ELB_ACM_CERTIFICATE_REQUIRED

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Africa (Cape Town), Asia Pacific (Osaka), Europe (Milan), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-cross-zone-load-balancing-enabled

Checks if cross-zone load balancing is enabled for Classic Load Balancers. The rule is NON_COMPLIANT if cross-zone load balancing is not enabled for Classic Load Balancers.

Identifier: ELB_CROSS_ZONE_LOAD_BALANCING_ENABLED

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-custom-security-policy-ssl-check

Checks whether your Classic Load Balancer SSL listeners are using a custom policy. The rule is only applicable if there are SSL listeners for the Classic Load Balancer.

Identifier: ELB_CUSTOM_SECURITY_POLICY_SSL_CHECK

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Jakarta), Asia Pacific (Osaka), Asia Pacific (Melbourne), Asia Pacific (Taipei) Region

Parameters:

sslProtocolsAndCiphers, Type: String

Comma separated list of ciphers and protocols.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-deletion-protection-enabled

Checks if an Elastic Load Balancer has deletion protection enabled. The rule is NON_COMPLIANT if deletion_protection.enabled is false.

Identifier: ELB_DELETION_PROTECTION_ENABLED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-logging-enabled

Checks if the Application Load Balancer and the Classic Load Balancer have logging enabled. The rule is NON_COMPLIANT if the `access_logs.s3.enabled` is false or `access_logs.S3.bucket` is not equal to the s3BucketName that you provided.

> **Note**
>
> The rule does not apply to Network Load Balancers or Gateway Load Balancers.

Identifier: ELB_LOGGING_ENABLED

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer, AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

s3BucketNames (Optional), Type: CSV

Comma-separated list of Amazon S3 bucket names for Amazon ELB to deliver the log files.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-predefined-security-policy-ssl-check

Checks if your Classic Load Balancer SSL listeners use a predefined policy. The rule is NON_COMPLIANT if the Classic Load Balancer HTTPS/SSL listener's policy does not equal the value of the parameter '`predefinedPolicyName`'.

Identifier: ELB_PREDEFINED_SECURITY_POLICY_SSL_CHECK

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Osaka) Region

Parameters:

predefinedPolicyName, Type: String

Name of the predefined policy.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

elb-tls-https-listeners-only

Checks if your Classic Load Balancer is configured with SSL or HTTPS listeners. The rule is NON_COMPLIANT if a listener is not configured with SSL or HTTPS.

- If the Classic Load Balancer does not have a listener configured, then the rule returns `NOT_APPLICABLE`.
- The rule is COMPLIANT if the Classic Load Balancer listeners are configured with SSL or HTTPS.
- The rule is NON_COMPLIANT if a listener is not configured with SSL or HTTPS.

Identifier: ELB_TLS_HTTPS_LISTENERS_ONLY

Resource Types: AWS::ElasticLoadBalancing::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (UAE), Asia Pacific (Osaka) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

emr-block-public-access

Checks if an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Identifier: EMR_BLOCK_PUBLIC_ACCESS

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

emr-kerberos-enabled

Checks if Amazon EMR clusters have Kerberos enabled. The rule is NON_COMPLIANT if a security configuration is not attached to the cluster or the security configuration does not satisfy the specified rule parameters.

Identifier: EMR_KERBEROS_ENABLED

Resource Types: AWS::EMR::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

TicketLifetimeInHours (Optional), Type: int

Period for which Kerberos ticket issued by cluster's KDC is valid.

Realm (Optional), Type: String

Kereberos realm name of the other realm in the trust relationship.

Domain (Optional), Type: String

Domain name of the other realm in the trust relationship.

AdminServer (Optional), Type: String

Fully qualified domain of the admin server in the other realm of the trust relationship.

KdcServer (Optional), Type: String

Fully qualified domain of the KDC server in the other realm of the trust relationship.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

emr-master-no-public-ip

Checks if Amazon EMR clusters' master nodes have public IPs. The rule is NON_COMPLIANT if the master node has a public IP.

> **Note**
>
> This rule checks clusters that are in RUNNING or WAITING state. This rule requires you to enable recording for the `AWS::EC2::Instance` resource type in order to have an accurate evaluation.

Identifier: EMR_MASTER_NO_PUBLIC_IP

Resource Types: AWS::EMR::Cluster, AWS::EC2::Instance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Osaka), Asia Pacific (Melbourne), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

emr-security-configuration-encryption-rest

Checks if an Amazon EMR security configuration has encryption at rest enabled. The rule is NON_COMPLIANT if configuration.SecurityConfiguration.EncryptionConfiguration.EnableAtRestEncryption is false.

Identifier: EMR_SECURITY_CONFIGURATION_ENCRYPTION_REST

Resource Types: AWS::EMR::SecurityConfiguration

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

emr-security-configuration-encryption-transit

Checks if an Amazon EMR security configuration has encryption in transit enabled. The rule is NON_COMPLIANT if configuration.SecurityConfiguration.EncryptionConfiguration.EnableInTransitEncryption is false.

Identifier: EMR_SECURITY_CONFIGURATION_ENCRYPTION_TRANSIT

Resource Types: AWS::EMR::SecurityConfiguration

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

encrypted-volumes

Checks if attached Amazon EBS volumes are encrypted and optionally are encrypted with a specified KMS key. The rule is NON_COMPLIANT if attached EBS volumes are unencrypted or are encrypted with a KMS key not in the supplied parameters.

Identifier: ENCRYPTED_VOLUMES

Resource Types: AWS::EC2::Volume

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

kmsId (Optional), Type: String

ID or ARN of the KMS key that is used to encrypt the volume.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

event-data-store-cmk-encryption-enabled

Checks if AWS Cloud Trail event data stores have customer managed AWS KMS keys enabled. The rule is NON_COMPLIANT if an event data store has disabled customer managed KMS keys. Optionally, you can specify a list of KMS keys for the rule to check.

Identifier: EVENT_DATA_STORE_CMK_ENCRYPTION_ENABLED

Resource Types: AWS::CloudTrail::EventDataStore

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARNs) of AWS KMS keys for the rule to check. If provided, the rule is NON_COMPLIANT if an AWS Cloud Trail event data store is not encrypted with one of these KMS keys.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-launch-description

Checks if Amazon CloudWatch Evidently launches have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: EVIDENTLY_LAUNCH_DESCRIPTION

Resource Types: AWS::Evidently::Launch

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-launch-tagged

Checks if Amazon CloudWatch Evidently launches have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EVIDENTLY_LAUNCH_TAGGED

Resource Types: AWS::Evidently::Launch

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-project-description

Checks if Amazon CloudWatch Evidently projects have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: EVIDENTLY_PROJECT_DESCRIPTION

Resource Types: AWS::Evidently::Project

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-project-tagged

Checks if Amazon CloudWatch Evidently projects have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EVIDENTLY_PROJECT_TAGGED

Resource Types: AWS::Evidently::Project

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-segment-description

Checks if Amazon CloudWatch Evidently segments have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: EVIDENTLY_SEGMENT_DESCRIPTION

Resource Types: AWS::Evidently::Segment

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

evidently-segment-tagged

Checks if Amazon CloudWatch Evidently segments have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: EVIDENTLY_SEGMENT_TAGGED

Resource Types: AWS::Evidently::Segment

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fis-experiment-template-log-configuration-exists

Checks if AWS FIS experiment templates have experiment logging configured. The rule is NON_COMPLIANT if configuration.LogConfiguration does not exist.

Identifier: FIS_EXPERIMENT_TEMPLATE_LOG_CONFIGURATION_EXISTS

Resource Types: AWS::FIS::ExperimentTemplate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia),

Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fis-experiment-template-tagged

Checks if AWS FIS experiment templates have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: FIS_EXPERIMENT_TEMPLATE_TAGGED

Resource Types: AWS::FIS::ExperimentTemplate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fms-shield-resource-policy-check

Checks if resources that AWS Shield Advanced can protect are protected by Shield Advanced. The rule is NON_COMPLIANT if a specified resource is not protected.

Identifier: FMS_SHIELD_RESOURCE_POLICY_CHECK

Resource Types: AWS::CloudFront::Distribution, AWS::ElasticLoadBalancingV2::LoadBalancer, AWS::WAFRegional::WebACL, AWS::EC2::EIP, AWS::ElasticLoadBalancing::LoadBalancer, AWS::ShieldRegional::Protection, AWS::Shield::Protection

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary), China (Ningxia) Region

Parameters:

webACLId, Type: String

A unique identifier for a Web ACL.

resourceTypes, Type: String

The resource types you specify for the rule to check.

resourceTags (Optional), Type: String

The resource tags you specify for the rule to check. For example, { "tagKey1" : ["tagValue1"], "tagKey2" : ["tagValue2", "tagValue3"] }.

excludeResourceTags (Optional), Type: boolean

If true, the rule excludes the resources specified in resourceTags. If false, the rule includes all the resources specified in resourceTags.

fmsManagedToken (Optional), Type: String

A token generated by AWS Firewall Manager when creating the rule in your account. AWS Config ignores this parameter when you create this rule.

fmsRemediationEnabled (Optional), Type: boolean

If true, AWS Firewall Manager will update NON_COMPLIANT resources according to FMS policy. AWS Config ignores this parameter when you create this rule.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fms-webacl-resource-policy-check

Checks if the web ACL is associated with an Application Load Balancer, API Gateway stage, or Amazon CloudFront distributions. When AWS Firewall Manager creates this rule, the FMS policy owner specifies the `WebACLId` in the FMS policy and can optionally enable remediation.

Identifier: FMS_WEBACL_RESOURCE_POLICY_CHECK

Resource Types: AWS::CloudFront::Distribution, AWS::ApiGateway::Stage, AWS::ElasticLoadBalancingV2::LoadBalancer, AWS::WAFRegional::WebACL

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

webACLId, Type: String

The WebACLId of the web ACL.

resourceTags (Optional), Type: String

The resource tags (ApplicationLoadBalancer, ApiGatewayStage and CloudFront distributions) that the rule should be associated with. (for example, { "tagKey1" : ["tagValue1"], "tagKey2" : ["tagValue2", "tagValue3"] })

excludeResourceTags (Optional), Type: boolean

If true, exclude resources that match resourceTags.

fmsManagedToken (Optional), Type: String

A token generated by AWS Firewall Manager when creating the rule in customer account. AWS Config ignores this parameter when customer creates this rule.

fmsRemediationEnabled (Optional), Type: boolean

If true, AWS Firewall Manager will update non-compliant resources according to FMS policy. AWS Config ignores this parameter when customer creates this rule.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fms-webacl-rulegroup-association-check

Checks if the rule groups associate with the web ACL at the correct priority. The correct priority is decided by the rank of the rule groups in the ruleGroups parameter. When AWS Firewall Manager creates this rule, it assigns the highest priority 0 followed by 1, 2, and so on. The FMS policy owner specifies the `ruleGroups` rank in the FMS policy and can optionally enable remediation.

Identifier: FMS_WEBACL_RULEGROUP_ASSOCIATION_CHECK

Resource Types: AWS::WAF::WebACL, AWS::WAFRegional::WebACL

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

ruleGroups, Type: String

Comma-separated list of RuleGroupIds and WafOverrideAction pairs. (for example, ruleGroupId-1:NONE, ruleGroupId2:COUNT)

fmsManagedToken (Optional), Type: String

A token generated by AWS Firewall Manager when creating the rule in customer account. AWS Config ignores this parameter when customer creates this rule.

fmsRemediationEnabled (Optional), Type: boolean

If true, AWS Firewall Manager will update non-compliant resources according to FMS policy. AWS Config ignores this parameter when customer creates this rule.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

frauddetector-entity-type-tagged

Checks if Amazon Fraud Detector entity types have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: FRAUDDETECTOR_ENTITY_TYPE_TAGGED

Resource Types: AWS::FraudDetector::EntityType

Trigger type: Configuration changes

AWS Region: Only available in US East (Ohio), Europe (Ireland), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

frauddetector-label-tagged

Checks if Amazon Fraud Detector labels have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: FRAUDDETECTOR_LABEL_TAGGED

Resource Types: AWS::FraudDetector::Label

Trigger type: Configuration changes

AWS Region: Only available in US East (Ohio), Europe (Ireland), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

frauddetector-outcome-tagged

Checks if Amazon Fraud Detector outcomes have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: FRAUDDETECTOR_OUTCOME_TAGGED

Resource Types: AWS::FraudDetector::Outcome

Trigger type: Configuration changes

AWS Region: Only available in US East (Ohio), Europe (Ireland), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

frauddetector-variable-tagged

Checks if Amazon Fraud Detector variables have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: FRAUDDETECTOR_VARIABLE_TAGGED

Resource Types: AWS::FraudDetector::Variable

Trigger type: Configuration changes

AWS Region: Only available in US East (Ohio), Europe (Ireland), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon FSx File Systems. The rule is NON_COMPLIANT if the Amazon FSx File System does not have a corresponding recovery point created within the specified time period.

Identifier: FSX_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific

(Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon FSx File Systems for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon FSx File System for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-lustre-copy-tags-to-backups

Checks if the Amazon FSx for Lustre file systems are configured to copy tags to backups. The rule is NON_COMPLIANT if Lustre file systems are not configured to copy tags to backups.

Identifier: FSX_LUSTRE_COPY_TAGS_TO_BACKUPS

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-meets-restore-time-target

Checks if the restore time of Amazon FSx File Systems meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon FSx File System is greater than maxRestoreTime minutes.

Identifier: FSX_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Amazon FSx File Systems for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon FSx File System for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-ontap-deployment-type-check

Checks if Amazon FSx for NetApp ONTAP file systems are configured with certain deployment types. The rule is NON_COMPLIANT if the Amazon FSx for NetApp ONTAP file systems are not configured with the deployment types you specify.

Identifier: FSX_ONTAP_DEPLOYMENT_TYPE_CHECK

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

deploymentTypes, Type: CSV

Comma-separated list of allowed Deployment types for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-openzfs-copy-tags-enabled

Checks if the Amazon FSx for OpenZFS file systems are configured to copy tags to backups and volumes. The rule is NON_COMPLIANT if FSx for OpenZFS file systems are not configured to copy tags to backups and volumes.

Identifier: FSX_OPENZFS_COPY_TAGS_ENABLED

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-openzfs-deployment-type-check

Checks if the Amazon FSx for OpenZFS file systems are configured with certain deployment types. The rule is NON_COMPLIANT if FSx for OpenZFS file systems are not configured with the deployment types you specify.

Identifier: FSX_OPENZFS_DEPLOYMENT_TYPE_CHECK

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Canada West (Calgary) Region

Parameters:

deploymentTypes, Type: CSV

Comma-separated list of allowed Deployment types for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-resources-protected-by-backup-plan

Checks if Amazon FSx File Systems are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon FSx File System is not covered by a backup plan.

Identifier: FSX_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon FSx File Systems for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of the Amazon FSx File System for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-windows-audit-log-configured

Checks if the Amazon FSx for Windows File Server file systems have file access auditing enabled. The rule is NON_COMPLIANT if the FSx for Windows File Server file systems do not have file access auditing enabled.

Identifier: FSX_WINDOWS_AUDIT_LOG_CONFIGURED

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

fsx-windows-deployment-type-check

Checks if the Amazon FSx for WINDOWS file systems are configured with certain deployment types. The rule is NON_COMPLIANT if FSx for WINDOWS file systems are not configured with the deployment types you specify.

Identifier: FSX_WINDOWS_DEPLOYMENT_TYPE_CHECK

Resource Types: AWS::FSx::FileSystem

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Europe (Paris), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

deploymentTypes, Type: CSV

Comma-separated list of allowed Deployment types for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

glb-listener-tagged

Checks if Gateway Load Balancer listeners have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: GLB_LISTENER_TAGGED

Resource Types: AWS::ElasticLoadBalancingV2::Listener

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

global-endpoint-event-replication-enabled

Checks if event replication is enabled for Amazon EventBridge global endpoints. The rule is NON_COMPLIANT if event replication is not enabled.

Identifier: GLOBAL_ENDPOINT_EVENT_REPLICATION_ENABLED

Resource Types: AWS::Events::Endpoint

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Osaka), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

glue-job-logging-enabled

Checks if an AWS Glue job has logging enabled. The rule is NON_COMPLIANT if an AWS Glue job does not have Amazon CloudWatch logs enabled.

Identifier: GLUE_JOB_LOGGING_ENABLED

Resource Types: AWS::Glue::Job

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

glue-ml-transform-encrypted-at-rest

Checks if an AWS Glue ML Transform has encryption at rest enabled. The rule is NON_COMPLIANT if `MLUserDataEncryptionMode` is set to `DISABLED`.

Identifier: GLUE_ML_TRANSFORM_ENCRYPTED_AT_REST

Resource Types: AWS::Glue::MLTransform

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

glue-spark-job-supported-version

Checks if an AWS Glue Spark job is running on the specified minimum supported AWS Glue version. The rule is NON_COMPLIANT if the AWS Glue Spark job is not running on the minimum supported AWS Glue version that you specify.

Identifier: GLUE_SPARK_JOB_SUPPORTED_VERSION

Resource Types: AWS::Glue::Job

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

minimumSupportedGlueVersion, Type: String

String value you must specify of the minimum supported AWS Glue version for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-ec2-protection-runtime-enabled

Checks if ECS Runtime Monitoring with automated agent management is enabled for Amazon GuardDuty detector. The rule is NON_COMPLIANT if the feature is not enabled for your account or at least one member account in your organization.

Identifier: GUARDDUTY_EC2_PROTECTION_RUNTIME_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-ecs-protection-runtime-enabled

Checks if ECS Runtime Monitoring with automated agent management is enabled for Amazon GuardDuty detector. The rule is NON_COMPLIANT if the feature is not enabled for your account or at least one member account in your organization.

Identifier: GUARDDUTY_ECS_PROTECTION_RUNTIME_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-eks-protection-audit-enabled

Checks if Audit Log Monitoring for Amazon Elastic Kubernetes Service (Amazon EKS) is enabled for an Amazon GuardDuty detector in your account. The rule is NON_COMPLIANT if the EKS Audit Log Monitoring feature is not enabled for your account.

Identifier: GUARDDUTY_EKS_PROTECTION_AUDIT_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-eks-protection-runtime-enabled

Checks if Amazon EKS Runtime Monitoring with automated agent management is enabled for GuardDuty detector in your account. The rule is NON_COMPLIANT if EKS Runtime Monitoring with automated agent management in GuardDuty is not enabled for your account.

Identifier: GUARDDUTY_EKS_PROTECTION_RUNTIME_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-enabled-centralized

Checks if Amazon GuardDuty is enabled in your AWS account and AWS Region. If you provide an AWS account for centralization, the rule evaluates the GuardDuty results in the centralized account. The rule is COMPLIANT when GuardDuty is enabled.

Identifier: GUARDDUTY_ENABLED_CENTRALIZED

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

CentralMonitoringAccount (Optional), Type: String

Comma separated list of AWS Accounts (12-digit) where Amazon GuardDuty results are allowed to be centralized.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-lambda-protection-enabled

Checks if Lambda Protection is enabled for an Amazon GuardDuty detector in your account. The rule is NON_COMPLIANT if the Lambda Protection feature in Amazon GuardDuty is not enabled for your account.

Identifier: GUARDDUTY_LAMBDA_PROTECTION_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-malware-protection-enabled

Checks if Malware Protection is enabled for an Amazon GuardDuty detector in your account. The rule is NON_COMPLIANT if the Malware Protection feature in Amazon GuardDuty is not enabled for your account.

Identifier: GUARDDUTY_MALWARE_PROTECTION_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-non-archived-findings

Checks if Amazon GuardDuty has findings that are non-archived. The rule is NON_COMPLIANT if GuardDuty has non-archived low/medium/high severity findings older than the specified number in the daysLowSev/daysMediumSev/`daysHighSev` parameter.

Identifier: GUARDDUTY_NON_ARCHIVED_FINDINGS

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

daysLowSev (Optional), Type: int, Default: 30

The number of days Amazon GuardDuty low severity findings are allowed to stay non archived. The default is 30 days.

daysMediumSev (Optional), Type: int, Default: 7

The number of days Amazon GuardDuty medium severity findings are allowed to stay non archived. The default is 7 days.

daysHighSev (Optional), Type: int, Default: 1

The number of days Amazon GuardDuty high severity findings are allowed to stay non archived. The default is 1 day.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-rds-protection-enabled

Checks if Amazon Relational Database Service (Amazon RDS) protection is enabled for an Amazon GuardDuty detector in your account. The rule is NON_COMPLIANT if the Amazon RDS protection feature in Amazon GuardDuty is not enabled for you account.

Identifier: GUARDDUTY_RDS_PROTECTION_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-runtime-monitoring-enabled

Checks if Runtime Monitoring is enabled for Amazon GuardDuty detector in your account or organization. The rule is NON_COMPLIANT if Runtime Monitoring in GuardDuty is not enabled for your account or at least one member account in your organization.

Identifier: GUARDDUTY_RUNTIME_MONITORING_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

guardduty-s3-protection-enabled

Checks if S3 Protection is enabled for an Amazon GuardDuty Detector in your account. The rule is NON_COMPLIANT if the S3 Protection feature in Amazon GuardDuty is not enabled for your account.

Identifier: GUARDDUTY_S3_PROTECTION_ENABLED

Resource Types: AWS::GuardDuty::Detector

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-customer-policy-blocked-kms-actions

Checks if the managed AWS Identity and Access Management (IAM) policies that you create do not allow blocked actions on AWS KMS keys. The rule is NON_COMPLIANT if any blocked action is allowed on AWS KMS keys by the managed IAM policy.

> **Note**
>
> To be considered non-public, an IAM policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: IAM_CUSTOMER_POLICY_BLOCKED_KMS_ACTIONS

Resource Types: AWS::IAM::Policy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

blockedActionsPatterns, Type: CSV

Comma-separated list of blocked KMS action patterns. For example, you can list kms:Decrypt* or kms:ReEncrypt as blocked action patterns. The rule is NON_COMPLIANT if the managed IAM policy allows any action pattern listed in this parameter.

excludePermissionBoundaryPolicy (Optional), Type: boolean

Boolean flag to exclude the evaluation of IAM policies used as permissions boundaries. If set to 'true', the rule will not include permissions boundaries in the evaluation. Otherwise, all IAM policies in scope are evaluated when value is set to 'false.' Default value is 'false'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-external-access-analyzer-enabled

Checks if an IAM Access Analyzer for external access is activated in your account per region. The rule is NON_COMPLIANT if there are no analyzers for external access in the region or if the 'status' attribute is not set to 'ACTIVE'.

Identifier: IAM_EXTERNAL_ACCESS_ANALYZER_ENABLED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-group-has-users-check

Checks whether IAM groups have at least one IAM user.

Identifier: IAM_GROUP_HAS_USERS_CHECK

Resource Types: AWS::IAM::Group

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-inline-policy-blocked-kms-actions

Checks if the inline policies attached to your IAM users, roles, and groups do not allow blocked actions on all AWS KMS keys. The rule is NON_COMPLIANT if any blocked action is allowed on all AWS KMS keys in an inline policy.

Identifier: IAM_INLINE_POLICY_BLOCKED_KMS_ACTIONS

Resource Types: AWS::IAM::Group, AWS::IAM::Role, AWS::IAM::User

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

blockedActionsPatterns, Type: CSV

Comma-separated list of blocked KMS action patterns, for example, kms:*, kms:Decrypt, kms:ReEncrypt*.

excludeRoleByManagementAccount (Optional), Type: boolean

Exclude a role if it is only assumable by organization management account.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-no-inline-policy-check

Checks if the inline policy feature is not in use. The rule is NON_COMPLIANT if an AWS Identity and Access Management (IAM) user, IAM role or IAM group has any inline policy.

Identifier: IAM_NO_INLINE_POLICY_CHECK

Resource Types: AWS::IAM::User, AWS::IAM::Role, AWS::IAM::Group

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-oidc-provider-tagged

Checks if AWS IAM OIDC providers have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IAM_OIDC_PROVIDER_TAGGED

Resource Types: AWS::IAM::OIDCProvider

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-password-policy

Checks if the account password policy for AWS Identity and Access Management (IAM) users meets the specified requirements indicated in the parameters. The rule is NON_COMPLIANT if the account password policy does not meet the specified requirements.

> **Important**
>
> The `true` and `false` values for the rule parameters are case-sensitive. If `true` is not provided in lowercase, it will be treated as `false`.

> **Note**
>
> **Evaluation Result for the Default IAM Password Policy**
> This rule is marked as NON_COMPLIANT when the default IAM password policy is used.
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: IAM_PASSWORD_POLICY

Trigger type: Periodic

AWS Region: All supported AWS regions except Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

RequireUppercaseCharacters (Optional), Type: boolean, Default: true

Require at least one uppercase character in password.

RequireLowercaseCharacters (Optional), Type: boolean, Default: true

Require at least one lowercase character in password.

RequireSymbols (Optional), Type: boolean, Default: true

Require at least one symbol in password.

RequireNumbers (Optional), Type: boolean, Default: true

Require at least one number in password.

MinimumPasswordLength (Optional), Type: int, Default: 14

Password minimum length.

PasswordReusePrevention (Optional), Type: int, Default: 24

Number of passwords before allowing reuse.

MaxPasswordAge (Optional), Type: int, Default: 90

Number of days before password expiration.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-policy-blacklisted-check

Checks in each AWS Identity and Access Management (IAM) resource, if a policy Amazon Resource Name (ARN) in the input parameter is attached to the IAM resource. The rule is NON_COMPLIANT if the policy ARN is attached to the IAM resource.

Identifier: IAM_POLICY_BLACKLISTED_CHECK

Resource Types: AWS::IAM::User, AWS::IAM::Group, AWS::IAM::Role

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

policyArns, Type: CSV, Default: arn:aws:iam::aws:policy/AdministratorAccess

Comma separated list of IAM policy arns which should not be attached to any IAM entity.

exceptionList (Optional), Type: CSV

Comma separated list of resourcetypes and list of resource name pairs. For example, users: [user1;user2], groups:[group1;group2], roles:[role1;role2;role3].

> **Note**
>
> For the exception list, specify the name of the resource and not the full ARN. Not valid: `arn:aws:iam::444455556666:role/Admin`. Valid: `Admin`.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-policy-in-use

Checks whether the IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

> **Note**
>
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These

resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: IAM_POLICY_IN_USE

Resource Types: AWS::IAM::Policy

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

policyARN, Type: String

An IAM policy ARN to be checked.

policyUsageType (Optional), Type: String

Specify whether you expect the policy to be attached to an IAM user, group or role. Valid values are IAM_USER, IAM_GROUP, IAM_ROLE, or ANY. Default value is ANY.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-policy-no-statements-with-admin-access

Checks if AWS Identity and Access Management (IAM) policies that you create have Allow statements that grant permissions to all actions on all resources. The rule is NON_COMPLIANT if any customer managed IAM policy statement includes "Effect": "Allow" with "Action": "*" over "Resource": "*".

> **Note**
>
> This rule only evaluates customer managed policies. This rule does NOT evaluate inline policies or AWS managed policies. For more information on the difference, see Managed policies and inline policies in the *IAM User Guide*.

The following policy is NON_COMPLIANT:

```
"Statement": [
{
"Sid": "VisualEditor",
"Effect": "Allow",
"Action": "*",
"Resource": "*"
}
```

The following policy is COMPLIANT:

```
"Statement": [
{
"Sid": "VisualEditor",
"Effect": "Allow",
"Action": "service:*",
"Resource": "*"
}
```

Identifier: IAM_POLICY_NO_STATEMENTS_WITH_ADMIN_ACCESS

Resource Types: AWS::IAM::Policy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

excludePermissionBoundaryPolicy (Optional), Type: boolean

> Boolean flag to exclude the evaluation of IAM policies used as permissions boundaries. If set to 'true', the rule will not include permissions boundaries in the evaluation. Otherwise, all IAM policies in scope are evaluated when value is set to 'false.' Default value is 'false'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-policy-no-statements-with-full-access

Checks if AWS Identity and Access Management (IAM) policies that you create grant permissions to all actions on individual AWS resources. The rule is NON_COMPLIANT if any customer managed IAM policy allows full access to at least 1 AWS service.

Context: Following the principle of least privilege, it is recommended to limit the permitted actions in your IAM policies when granting permissions to AWS services. This approach helps ensure that you only grant the necessary permissions by specifying the exact actions required, avoiding the use of unrestricted wildcards for a service, such as `ec2:*`.

In some cases, you might want to permit multiple actions with a similar prefix, such as DescribeFlowLogs and DescribeAvailabilityZones. In these cases, you can add a suffixed wildcard to the common prefix (for example, `ec2:Describe*`). Grouping related actions can help avoid hitting IAM policy size limits.

This rule will return COMPLIANT if you use prefixed actions with a suffixed wildcard (for example, `ec2:Describe*`). This rule will only return NON_COMPLIANT if you use unrestricted wildcards (for example, `ec2:*`).

> **Note**
>
> This rule only evaluates customer managed policies. This rule does NOT evaluate inline policies or AWS managed policies. For more information on the difference, see Managed policies and inline policies in the *IAM User Guide*.

Identifier: IAM_POLICY_NO_STATEMENTS_WITH_FULL_ACCESS

Resource Types: AWS::IAM::Policy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

excludePermissionBoundaryPolicy (Optional), Type: boolean

> Boolean flag to exclude the evaluation of IAM policies used as permissions boundaries. If set to 'true', the rule will not include permissions boundaries in the evaluation. Otherwise, all IAM policies in scope are evaluated when value is set to 'false.' Default value is 'false'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-role-managed-policy-check

Checks if all managed policies specified in the list of managed policies are attached to the AWS Identity and Access Management (IAM) role. The rule is NON_COMPLIANT if a managed policy is not attached to the IAM role.

Identifier: IAM_ROLE_MANAGED_POLICY_CHECK

Resource Types: AWS::IAM::Role

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

managedPolicyArns, Type: CSV

Comma-separated list of AWS managed policy Amazon Resource Names (ARNs). For more information, see Amazon Resource Names (ARNs) and AWS managed policies in the *IAM User Guide*.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-root-access-key-check

Checks if the root user access key is available. The rule is COMPLIANT if the user access key does not exist. Otherwise, NON_COMPLIANT.

> **Note**
>
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: IAM_ROOT_ACCESS_KEY_CHECK

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-saml-provider-tagged

Checks if AWS IAM SAML providers have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IAM_SAML_PROVIDER_TAGGED

Resource Types: AWS::IAM::SAMLProvider

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-server-certificate-expiration-check

Checks if AWS IAM SSL/TLS server certificates stored in IAM are expired. The rule is NON_COMPLIANT if an IAM server certificate is expired.

Identifier: IAM_SERVER_CERTIFICATE_EXPIRATION_CHECK

Resource Types: AWS::IAM::ServerCertificate

Trigger type: Periodic

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-server-certificate-tagged

Checks if AWS IAM server certificates have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IAM_SERVER_CERTIFICATE_TAGGED

Resource Types: AWS::IAM::ServerCertificate

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-user-group-membership-check

Checks whether IAM users are members of at least one IAM group.

Identifier: IAM_USER_GROUP_MEMBERSHIP_CHECK

Resource Types: AWS::IAM::User

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

groupNames (Optional), Type: String

Comma-separated list of IAM groups in which IAM users must be members.

> **Note**
>
> This rule does not support group names with commas.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-user-mfa-enabled

Checks if the AWS Identity and Access Management (IAM) users have multi-factor authentication (MFA) enabled. The rule is NON_COMPLIANT if MFA is not enabled for at least one IAM user.

> **Note**
>
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: IAM_USER_MFA_ENABLED

Resource Types: AWS::IAM::User

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-user-no-policies-check

Checks if none of your AWS Identity and Access Management (IAM) users have policies attached. IAM users must inherit permissions from IAM groups or roles. The rule is NON_COMPLIANT if there is at least one policy that is attached to the IAM user.

Identifier: IAM_USER_NO_POLICIES_CHECK

Resource Types: AWS::IAM::User

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iam-user-unused-credentials-check

Checks if your AWS Identity and Access Management (IAM) users have passwords or active access keys that have not been used within the specified number of days you provided. The rule is NON_COMPLIANT if there are inactive accounts not recently used.

> **Note**
>
> **Re-evaluation Timeline**
>
> Re-evaluating this rule within 4 hours of the first evaluation will have no effect on the results.

Managed Rules and Global IAM Resource Types
The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: IAM_USER_UNUSED_CREDENTIALS_CHECK

Resource Types: AWS::IAM::User

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

maxCredentialUsageAge, Type: int, Default: 90

Maximum number of days a credential cannot be used. The default value is 90 days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

restricted-ssh

> **Important**
>
> For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different.

Checks if the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.

Identifier: INCOMING_SSH_DISABLED

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

inspector-ec2-scan-enabled

Checks if Amazon Inspector V2 EC2 scanning is activated for your single or multi-account environment to detect potential vulnerabilities and network reachability issues on your EC2 instances. The rule is NON_COMPLIANT if EC2 scanning is not activated.

Identifier: INSPECTOR_EC2_SCAN_ENABLED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

inspector-ecr-scan-enabled

Checks if Amazon Inspector V2 ECR scanning is activated for your single or multi-account environment to detect potential software vulnerabilities in your container images. The rule is NON_COMPLIANT if ECR scanning is not activated.

Identifier: INSPECTOR_ECR_SCAN_ENABLED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

inspector-lambda-code-scan-enabled

Checks if Amazon Inspector V2 Lambda code scanning is activated for your single or multi-account environment to detect potential code vulnerabilities. The rule is NON_COMPLIANT if Lambda code scanning is not activated.

Identifier: INSPECTOR_LAMBDA_CODE_SCAN_ENABLED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

inspector-lambda-standard-scan-enabled

Checks if Amazon Inspector V2 Lambda standard scanning is activated for your single or multi-account environment to detect potential software vulnerabilities. The rule is NON_COMPLIANT if Lambda standard scanning is not activated.

Identifier: INSPECTOR_LAMBDA_STANDARD_SCAN_ENABLED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ec2-instances-in-vpc

> **Important**
>
> For this rule, the rule identifier (INSTANCES_IN_VPC) and rule name (ec2-instances-in-vpc) are different.

Checks if your EC2 instances belong to a virtual private cloud (VPC). Optionally, you can specify the VPC ID to associate with your instances.

Identifier: INSTANCES_IN_VPC

Resource Types: AWS::EC2::Instance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

vpcId (Optional), Type: String

VPC ID that contains these EC2 instances.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

internet-gateway-authorized-vpc-only

Checks if internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Identifier: INTERNET_GATEWAY_AUTHORIZED_VPC_ONLY

Resource Types: AWS::EC2::InternetGateway

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

AuthorizedVpcIds (Optional), Type: String

> Comma-separated list of the authorized VPC IDs with attached IGWs. If parameter is not provided all attached IGWs will be NON_COMPLIANT.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotevents-alarm-model-tagged

Checks if AWS IoT Events alarm models have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTEVENTS_ALARM_MODEL_TAGGED

Resource Types: AWS::IoTEvents::AlarmModel

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotevents-detector-model-tagged

Checks if AWS IoT Events detector models have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTEVENTS_DETECTOR_MODEL_TAGGED

Resource Types: AWS::IoTEvents::DetectorModel

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotevents-input-tagged

Checks if AWS IoT Events inputs have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTEVENTS_INPUT_TAGGED

Resource Types: AWS::IoTEvents::Input

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotsitewise-asset-model-tagged

Checks if AWS IoT SiteWise asset models have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTSITEWISE_ASSET_MODEL_TAGGED

Resource Types: AWS::IoTSiteWise::AssetModel

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotsitewise-dashboard-tagged

Checks if AWS IoT SiteWise dashboards have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTSITEWISE_DASHBOARD_TAGGED

Resource Types: AWS::IoTSiteWise::Dashboard

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotsitewise-gateway-tagged

Checks if AWS IoT SiteWise gateways have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTSITEWISE_GATEWAY_TAGGED

Resource Types: AWS::IoTSiteWise::Gateway

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotsitewise-portal-tagged

Checks if AWS IoT SiteWise portals have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTSITEWISE_PORTAL_TAGGED

Resource Types: AWS::IoTSiteWise::Portal

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotsitewise-project-tagged

Checks if AWS IoT SiteWise projects have tags. Optionally, you can specify tag keys for the rule. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTSITEWISE_PROJECT_TAGGED

Resource Types: AWS::IoTSiteWise::Project

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iottwinmaker-component-type-tagged

Checks if AWS IoT TwinMaker component types have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTTWINMAKER_COMPONENT_TYPE_TAGGED

Resource Types: AWS::IoTTwinMaker::ComponentType

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iottwinmaker-entity-tagged

Checks if AWS IoT TwinMaker entities have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTTWINMAKER_ENTITY_TAGGED

Resource Types: AWS::IoTTwinMaker::Entity

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iottwinmaker-scene-tagged

Checks if AWS IoT TwinMaker scenes have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTTWINMAKER_SCENE_TAGGED

Resource Types: AWS::IoTTwinMaker::Scene

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iottwinmaker-sync-job-tagged

Checks if AWS IoT TwinMaker sync jobs have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTTWINMAKER_SYNC_JOB_TAGGED

Resource Types: AWS::IoTTwinMaker::SyncJob

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iottwinmaker-workspace-tagged

Checks if AWS IoT TwinMaker workspaces have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTTWINMAKER_WORKSPACE_TAGGED

Resource Types: AWS::IoTTwinMaker::Workspace

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotwireless-fuota-task-tagged

Checks if AWS IoT Wireless FUOTA tasks have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTWIRELESS_FUOTA_TASK_TAGGED

Resource Types: AWS::IoTWireless::FuotaTask

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotwireless-multicast-group-tagged

Checks if AWS IoT Wireless multicast groups have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTWIRELESS_MULTICAST_GROUP_TAGGED

Resource Types: AWS::IoTWireless::MulticastGroup

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iotwireless-service-profile-tagged

Checks if AWS IoT Wireless service profiles have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IOTWIRELESS_SERVICE_PROFILE_TAGGED

Resource Types: AWS::IoTWireless::ServiceProfile

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Sydney) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

iot-authorizer-token-signing-enabled

Checks if an AWS IoT Core authorizer has not disabled the signing requirements for validating the token signature in an authorization request. The rule is NON_COMPLIANT if the authorizer has configuration.SigningDisabled set to True.

Identifier: IOT_AUTHORIZER_TOKEN_SIGNING_ENABLED

Resource Types: AWS::IoT::Authorizer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ivs-channel-playback-authorization-enabled

Checks if Amazon IVS channels have playback authorization enabled. The rule is NON_COMPLIANT if configuration.Authorized is false.

Identifier: IVS_CHANNEL_PLAYBACK_AUTHORIZATION_ENABLED

Resource Types: AWS::IVS::Channel

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ivs-channel-tagged

Checks if Amazon IVS channels have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IVS_CHANNEL_TAGGED

Resource Types: AWS::IVS::Channel

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ivs-playback-key-pair-tagged

Checks if Amazon IVS playback key pairs have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IVS_PLAYBACK_KEY_PAIR_TAGGED

Resource Types: AWS::IVS::PlaybackKeyPair

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ivs-recording-configuration-tagged

Checks if Amazon IVS recording configurations have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: IVS_RECORDING_CONFIGURATION_TAGGED

Resource Types: AWS::IVS::RecordingConfiguration

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Tokyo), US West (Oregon) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

kinesis-firehose-delivery-stream-encrypted

Checks if Amazon Kinesis Data Firehose delivery streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT if a Kinesis Data Firehose delivery stream is not encrypted at rest with server-side encryption.

Identifier: KINESIS_FIREHOSE_DELIVERY_STREAM_ENCRYPTED

Resource Types: AWS::KinesisFirehose::DeliveryStream

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of KMS Key Arns that are approved for Kinesis Firehose usage.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

kinesis-stream-backup-retention-check

Checks if an Amazon Kinesis Data Stream has its data record retention period set to a specific number of hours. The rule is NON_COMPLIANT if the property `RetentionPeriodHours` is set to a value less than the value specified by the parameter.

Identifier: KINESIS_STREAM_BACKUP_RETENTION_CHECK

Resource Types: AWS::Kinesis::Stream

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

minimumBackupRetentionPeriod (Optional), Type: String

Minimum hours data records should be retained. Valid values are 24 to 8760, default value is 168.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

kinesis-stream-encrypted

Checks if Amazon Kinesis streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT for a Kinesis stream if 'StreamEncryption' is not present.

Context: Server-side encryption is a feature in Amazon Kinesis Data Streams that automatically encrypts data before it's at rest by using an AWS KMS Key. Data is encrypted before it's written to the Kinesis stream storage layer, and decrypted after it's retrieved from storage. As a result, your data is encrypted at rest within the Kinesis Data Streams service. This can help you to meet regulatory requirements and enhance the security of your data. For more information, Data Protection in Amazon Kinesis Data Streams.

Identifier: KINESIS_STREAM_ENCRYPTED

Resource Types: AWS::Kinesis::Stream

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

kms-cmk-not-scheduled-for-deletion

Checks if AWS Key Management Service (AWS KMS) keys are not scheduled for deletion in AWS KMS. The rule is NON_COMPLIANT if KMS keys are scheduled for deletion.

Identifier: KMS_CMK_NOT_SCHEDULED_FOR_DELETION

Resource Types: AWS::KMS::Key

Trigger type: Periodic

AWS Region: All supported AWS regions except Europe (Milan), Asia Pacific (Taipei) Region

Parameters:

kmsKeyIds (Optional), Type: String

(Optional) Comma-separated list of specific customer managed key IDs not to be scheduled for deletion. If you do not specify any keys, the rule checks all the keys.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

kms-key-policy-no-public-access

Checks if the AWS KMS key policy allows public access. The rule is NON_COMPLIANT if the KMS key policy allows public access to the KMS key.

> **Note**
>
> To be considered non-public, a KMS key policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: KMS_KEY_POLICY_NO_PUBLIC_ACCESS

Resource Types: AWS::KMS::Key

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-concurrency-check

Checks if the Lambda function is configured with a function-level concurrent execution limit. The rule is NON_COMPLIANT if the Lambda function is not configured with a function-level concurrent execution limit.

Identifier: LAMBDA_CONCURRENCY_CHECK

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), China (Ningxia) Region

Parameters:

ConcurrencyLimitLow (Optional), Type: String

Minimum concurrency execution limit

ConcurrencyLimitHigh (Optional), Type: String

Maximum concurrency execution limit

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-dlq-check

Checks if a Lambda function is configured with a dead-letter queue. The rule is NON_COMPLIANT if the Lambda function is not configured with a dead-letter queue.

Identifier: LAMBDA_DLQ_CHECK

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), China (Ningxia) Region

Parameters:

dlqArns (Optional), Type: String

Comma-separated list of Amazon SQS and Amazon SNS ARNs that must be configured as the Lambda function dead-letter queue target.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-function-public-access-prohibited

Checks if the AWS Lambda function policy attached to the Lambda resource prohibits public access. If the Lambda function policy allows public access it is NON_COMPLIANT.

Context: A lambda function policy is considered to allow public access if the principal element is empty or contains a wildcard. For example, if the principal element is `“”` or `{“AWS”: “”}`. Granting public access is not recommended for security reasons. Restricting public access can help you prevent unauthorized invocations of your Lambda functions, which could compromise your data or incur unwanted costs.

To restrict access to your Lambda functions, specify the AWS account IDs or the Amazon Resource Names (ARNs) of the IAM users, roles, or services that can invoke the functions. For more information, see Granting function access to other accounts in the *AWS Lambda Developer Guide*.

The rule is also `NON_COMPLIANT` if a Lambda function is invoked from Amazon S3, and the policy doesn't include a condition to limit public access, such as `AWS:SourceAccount`. We recommend using other S3 conditions along with `AWS:SourceAccount` in your bucket policy for more refined access.

> **Note**
>
> To be considered non-public, a Lambda resource-based policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: LAMBDA_FUNCTION_PUBLIC_ACCESS_PROHIBITED

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Spain), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-function-settings-check

Checks if the AWS Lambda function settings for runtime, role, timeout, and memory size match the expected values. The rule ignores functions with the 'Image' package type and functions with runtime set to 'OS-only Runtime'. The rule is NON_COMPLIANT if the Lambda function settings do not match the expected values.

Identifier: LAMBDA_FUNCTION_SETTINGS_CHECK

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Ningxia) Region

Parameters:

runtime, Type: CSV

Comma-separated list of AWS Lambda runtime values

role (Optional), Type: String

Name or ARN of the AWS Lambda execution role

timeout (Optional), Type: int, Default: 3

AWS Lambda function timeout in seconds

memorySize (Optional), Type: int, Default: 128

AWS Lambda function size in megabytes

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
    "MemorySize": Integer*,
    "Role": String*,
    "Runtime": String*,
    "Timeout": Integer*
}
...
```

*For more information on valid values for these inputs, see MemorySize, Role, Runtime, and Timeout in the AWS CloudFormation User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-inside-vpc

Checks if a Lambda function is allowed access to a virtual private cloud (VPC). The rule is NON_COMPLIANT if the Lambda function is not VPC enabled.

Identifier: LAMBDA_INSIDE_VPC

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Ningxia) Region

Parameters:

subnetIds (Optional), Type: String

Comma-separated list of Subnet IDs that Lambda functions can be associated with.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "VpcConfig": {
         "SubnetIds": "[SubnetId-1, SubnetId-2, SubnetId-3, ...]"
   }
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lambda-vpc-multi-az-check

Checks if Lambda has more than 1 availability zone associated. The rule is NON_COMPLIANT if only 1 availability zone is associated with the Lambda or the number of availability zones associated is less than number specified in the optional parameter.

Identifier: LAMBDA_VPC_MULTI_AZ_CHECK

Resource Types: AWS::Lambda::Function

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

availabilityZones (Optional), Type: int

Number of expected Availability zones.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lightsail-bucket-tagged

Checks if Amazon Lightsail buckets have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: LIGHTSAIL_BUCKET_TAGGED

Resource Types: AWS::Lightsail::Bucket

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lightsail-certificate-tagged

Checks if Amazon Lightsail certificates have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: LIGHTSAIL_CERTIFICATE_TAGGED

Resource Types: AWS::Lightsail::Certificate

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

lightsail-disk-tagged

Checks if Amazon Lightsail disks have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: LIGHTSAIL_DISK_TAGGED

Resource Types: AWS::Lightsail::Disk

Trigger type: Configuration changes

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

macie-auto-sensitive-data-discovery-check

Checks if automated sensitive data discovery is enabled for Amazon Macie. The rule is NON_COMPLIANT if automated sensitive data discovery is disabled. The rule is APPLICABLE for administrator accounts and NOT_APPLICABLE for member accounts.

Identifier: MACIE_AUTO_SENSITIVE_DATA_DISCOVERY_CHECK

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

macie-status-check

Checks if Amazon Macie is enabled in your account per region. The rule is NON_COMPLIANT if the 'status' attribute is not set to 'ENABLED'.

Identifier: MACIE_STATUS_CHECK

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mariadb-publish-logs-to-cloudwatch-logs

Checks if Amazon MariaDB database instances are configured to publish logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if a database instance is not configured to publish logs to CloudWatch Logs.

Identifier: MARIADB_PUBLISH_LOGS_TO_CLOUDWATCH_LOGS

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

logTypes (Optional), Type: String

Comma-separated list of log types for the rule to check. If not provided, the rule checks for the default log types: 'error' and 'audit'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mfa-enabled-for-iam-console-access

Checks if AWS multi-factor authentication (MFA) is enabled for all AWS Identity and Access Management (IAM) users that use a console password. The rule is COMPLIANT if MFA is enabled.

> **Note**
>
> **Re-evaluation Timeline**
> Re-evaluating this rule within 4 hours of the first evaluation will have no effect on the results.
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of

which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: MFA_ENABLED_FOR_IAM_CONSOLE_ACCESS

Resource Types: AWS::IAM::User

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-active-broker-ldap-authentication

Checks if Amazon MQ ActiveMQ brokers use the LDAP authentication strategy to secure the broker. The rule is NON_COMPLIANT if configuration.AuthenticationStrategy is not 'ldap'.

Identifier: MQ_ACTIVE_BROKER_LDAP_AUTHENTICATION

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-active-deployment-mode

Checks the deployment mode configured for Amazon MQ ActiveMQ broker engine. The rule is NON_COMPLIANT if the default single-instance broker mode is being used.

Identifier: MQ_ACTIVE_DEPLOYMENT_MODE

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-active-single-instance-broker-storage-type-efs

Checks if an Amazon MQ for ActiveMQ single-instance broker using the mq.m5 instance type family is configured with Amazon Elastic File System (EFS) for broker storage. The rule is NON_COMPLIANT if configuration.StorageType is not 'efs'.

Identifier: MQ_ACTIVE_SINGLE_INSTANCE_BROKER_STORAGE_TYPE_EFS

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-automatic-minor-version-upgrade-enabled

Checks if automatic minor version upgrades are enabled for Amazon MQ brokers. The rule is NON_COMPLIANT if the 'AutoMinorVersionUpgrade' field is not enabled for an Amazon MQ broker.

Identifier: MQ_AUTOMATIC_MINOR_VERSION_UPGRADE_ENABLED

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-auto-minor-version-upgrade-enabled

Checks if automatic minor version upgrades are enabled for Amazon MQ brokers. The rule is NON_COMPLIANT if the 'AutoMinorVersionUpgrade' field is not enabled for an Amazon MQ broker.

Identifier: MQ_AUTO_MINOR_VERSION_UPGRADE_ENABLED

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-broker-general-logging-enabled

Checks if Amazon MQ brokers have general logging enabled. The rule is NON_COMPLIANT if configuration.Logs.General is false.

Identifier: MQ_BROKER_GENERAL_LOGGING_ENABLED

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-cloudwatch-audit-logging-enabled

Checks if Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Identifier: MQ_CLOUDWATCH_AUDIT_LOGGING_ENABLED

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-cloudwatch-audit-log-enabled

Checks if an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Identifier: MQ_CLOUDWATCH_AUDIT_LOG_ENABLED

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-no-public-access

Checks if Amazon MQ brokers are not publicly accessible. The rule is NON_COMPLIANT if the 'PubliclyAccessible' field is set to true for an Amazon MQ broker.

Identifier: MQ_NO_PUBLIC_ACCESS

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Africa (Cape Town), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

mq-rabbit-deployment-mode

Checks the deployment mode configured for the Amazon MQ RabbitMQ broker engine. The rule is NON_COMPLIANT if the default single-instance broker mode is being used.

Identifier: MQ_RABBIT_DEPLOYMENT_MODE

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

msk-enhanced-monitoring-enabled

Checks if enhanced monitoring is enabled for an Amazon MSK cluster set to PER_TOPIC_PER_BROKER or PER_TOPIC_PER_PARTITION. The rule is NON_COMPLIANT if enhanced monitoring is enabled and set to DEFAULT or PER_BROKER.

Identifier: MSK_ENHANCED_MONITORING_ENABLED

Resource Types: AWS::MSK::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

msk-in-cluster-node-require-tls

Checks if an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.

Identifier: MSK_IN_CLUSTER_NODE_REQUIRE_TLS

Resource Types: AWS::MSK::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

multi-region-cloudtrail-enabled

> **Important**
>
> For this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different.

Checks if there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the `ExcludeManagementEventSources` field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Identifier: MULTI_REGION_CLOUD_TRAIL_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

s3BucketName (Optional), Type: String

Name of Amazon S3 bucket for AWS CloudTrail to deliver log files to.

snsTopicArn (Optional), Type: String

Amazon SNS topic ARN for AWS CloudTrail to use for notifications.

cloudWatchLogsLogGroupArn (Optional), Type: String

Amazon CloudWatch log group ARN for AWS CloudTrail to send data to.

includeManagementEvents (Optional), Type: boolean

Event selector to include management events for the AWS CloudTrail.

readWriteType (Optional), Type: String

Type of events to record. Valid values are ReadOnly, WriteOnly and ALL.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

nacl-no-unrestricted-ssh-rdp

Checks if default ports for SSH/RDP ingress traffic for network access control lists (NACLs) is unrestricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.

Identifier: NACL_NO_UNRESTRICTED_SSH_RDP

Resource Types: AWS::EC2::NetworkAcl

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-backup-retention-check

Checks if an Amazon Neptune DB cluster retention period is set to specific number of days. The rule is NON_COMPLIANT if the retention period is less than the value specified by the parameter.

Identifier: NEPTUNE_CLUSTER_BACKUP_RETENTION_CHECK

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

minimumBackupRetentionPeriod (Optional), Type: int

> Minimum days backups should be kept. Valid values 1 to 35, default value is 7. The rule is NON_COMPLIANT if value is greater than 'backupRetentionPeriod'. The rule is COMPLIANT if value is less than or equal to 'backupRetentionPeriod'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-cloudwatch-log-export-enabled

Checks if an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Identifier: NEPTUNE_CLUSTER_CLOUDWATCH_LOG_EXPORT_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-copy-tags-to-snapshot-enabled

Checks if an Amazon Neptune cluster is configured to copy all tags to snapshots when the snapshots are created. The rule is NON_COMPLIANT if 'copyTagsToSnapshot' is set to false.

Identifier: NEPTUNE_CLUSTER_COPY_TAGS_TO_SNAPSHOT_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-deletion-protection-enabled

Checks if an Amazon Neptune DB cluster has deletion protection enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster has the deletionProtection field set to false.

Identifier: NEPTUNE_CLUSTER_DELETION_PROTECTION_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-encrypted

Checks if storage encryption is enabled for your Amazon Neptune DB clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.

Identifier: NEPTUNE_CLUSTER_ENCRYPTED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

KmsKeyArns (Optional), Type: CSV

A comma-separated list of KMS key ARNs to compare with the KmsKeyId of the encrypted cluster.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-iam-database-authentication

Checks if an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.

Identifier: NEPTUNE_CLUSTER_IAM_DATABASE_AUTHENTICATION

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan),

AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-multi-az-enabled

Checks if an Amazon Neptune cluster is configured with Amazon RDS Multi-AZ replication. The rule is NON_COMPLIANT if Multi-AZ replication is not enabled.

Identifier: NEPTUNE_CLUSTER_MULTI_AZ_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-snapshot-encrypted

Checks if an Amazon Neptune DB cluster has snapshots encrypted. The rule is NON_COMPLIANT if a Neptune cluster does not have snapshots encrypted.

Identifier: NEPTUNE_CLUSTER_SNAPSHOT_ENCRYPTED

Resource Types: AWS::RDS::DBClusterSnapshot

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

neptune-cluster-snapshot-public-prohibited

Checks if an Amazon Neptune manual DB cluster snapshot is public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.

Identifier: NEPTUNE_CLUSTER_SNAPSHOT_PUBLIC_PROHIBITED

Resource Types: AWS::RDS::DBClusterSnapshot

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-deletion-protection-enabled

Checks if AWS Network Firewall has deletion protection enabled. The rule is NON_COMPLIANT if Network Firewall does not have deletion protection enabled.

Identifier: NETFW_DELETION_PROTECTION_ENABLED

Resource Types: AWS::NetworkFirewall::Firewall

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-logging-enabled

Checks if AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.

Identifier: NETFW_LOGGING_ENABLED

Resource Types: AWS::NetworkFirewall::LoggingConfiguration

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

logType (Optional), Type: String

logType (Optional): Log type for the rule to check for firewalls: 'alert', 'flow', or 'both'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-multi-az-enabled

Checks if AWS Network Firewall firewalls are deployed across multiple Availability Zones. The rule is NON_COMPLIANT if firewalls are deployed in only one Availability Zone or in fewer zones than the number listed in the optional parameter.

Identifier: NETFW_MULTI_AZ_ENABLED

Resource Types: AWS::NetworkFirewall::Firewall

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

availabilityZones (Optional), Type: int

The number of expected Availability Zones.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-policy-default-action-fragment-packets

Checks if an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Identifier: NETFW_POLICY_DEFAULT_ACTION_FRAGMENT_PACKETS

Resource Types: AWS::NetworkFirewall::FirewallPolicy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

statelessFragmentDefaultActions, Type: CSV

> Comma-separated list of values. You can select a max of two. Valid values include 'aws:pass', 'aws:drop', and 'aws:forward_to_sfe'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-policy-default-action-full-packets

Checks if an AWS Network Firewall policy is configured with a user defined default stateless action for full packets. This rule is NON_COMPLIANT if default stateless action for full packets does not match with user defined default stateless action.

Identifier: NETFW_POLICY_DEFAULT_ACTION_FULL_PACKETS

Resource Types: AWS::NetworkFirewall::FirewallPolicy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

statelessDefaultActions, Type: CSV

Comma-separated list of values. You can select a max of two. Valid values include 'aws:pass', 'aws:drop', and 'aws:forward_to_sfe'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-policy-rule-group-associated

Check AWS Network Firewall policy is associated with stateful OR stateless rule groups. This rule is NON_COMPLIANT if no stateful or stateless rule groups are associated with the Network Firewall policy else COMPLIANT if any one of the rule group exists.

Identifier: NETFW_POLICY_RULE_GROUP_ASSOCIATED

Resource Types: AWS::NetworkFirewall::FirewallPolicy

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-stateless-rule-group-not-empty

Checks if a Stateless Network Firewall Rule Group contains rules. The rule is NON_COMPLIANT if there are no rules in a Stateless Network Firewall Rule Group.

Identifier: NETFW_STATELESS_RULE_GROUP_NOT_EMPTY

Resource Types: AWS::NetworkFirewall::RuleGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

netfw-subnet-change-protection-enabled

Checks if AWS Network Firewall has subnet change protection enabled. The rule is NON_COMPLIANT if subnet change protection is not enabled.

Identifier: NETFW_SUBNET_CHANGE_PROTECTION_ENABLED

Resource Types: AWS::NetworkFirewall::Firewall

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

nlb-cross-zone-load-balancing-enabled

Checks if cross-zone load balancing is enabled on Network Load Balancers (NLBs). The rule is NON_COMPLIANT if cross-zone load balancing is not enabled for an NLB.

Identifier: NLB_CROSS_ZONE_LOAD_BALANCING_ENABLED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

nlb-internal-scheme-check

Checks if a Network Load Balancer scheme is internal. The rule is NON_COMPLIANT if configuration.scheme is not set to internal.

Identifier: NLB_INTERNAL_SCHEME_CHECK

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

nlb-listener-tagged

Checks if Network Load Balancer listeners have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: NLB_LISTENER_TAGGED

Resource Types: AWS::ElasticLoadBalancingV2::Listener

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

nlb-logging-enabled

Checks if access logging is enabled for Network Load Balancers. The rule is NON_COMPLIANT if access logging is not enabled for a Network Load balancer.

Identifier: NLB_LOGGING_ENABLED

Resource Types: AWS::ElasticLoadBalancingV2::LoadBalancer

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

no-unrestricted-route-to-igw

Checks if there are public routes in the route table to an Internet gateway (IGW). The rule is NON_COMPLIANT if a route to an IGW has a destination CIDR block of '0.0.0.0/0' or '::/0' or if a destination CIDR block does not match the rule parameter.

Identifier: NO_UNRESTRICTED_ROUTE_TO_IGW

Resource Types: AWS::EC2::RouteTable

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

routeTableIds (Optional), Type: CSV

> Comma-separated list of route table IDs that can have routes to an Internet Gateway with a destination CIDR block of '0.0.0.0/0' or '::/0'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-access-control-enabled

Checks if Amazon OpenSearch Service domains have fine-grained access control enabled. The rule is NON_COMPLIANT if AdvancedSecurityOptions is not enabled for the OpenSearch Service domain.

Identifier: OPENSEARCH_ACCESS_CONTROL_ENABLED

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-audit-logging-enabled

Checks if Amazon OpenSearch Service domains have audit logging enabled. The rule is NON_COMPLIANT if an OpenSearch Service domain does not have audit logging enabled.

Identifier: OPENSEARCH_AUDIT_LOGGING_ENABLED

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

cloudWatchLogsLogGroupArnList (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARNs) for Amazon CloudWatch Logs log groups. The rule checks if the specified log groups are configured for audit logs.

Valid values include: `arn:aws:logs:region:account-id:log-group:log_group_name:*` and `arn:aws:logs:region:account-id:log-group:log_group_name`.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-data-node-fault-tolerance

Checks if Amazon OpenSearch Service domains are configured with at least three data nodes and zoneAwarenessEnabled is true. The rule is NON_COMPLIANT for an OpenSearch domain if 'instanceCount' is less than 3 or 'zoneAwarenessEnabled' is set to 'false'.

Identifier: OPENSEARCH_DATA_NODE_FAULT_TOLERANCE

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-encrypted-at-rest

Checks if Amazon OpenSearch Service domains have encryption at rest configuration enabled. The rule is NON_COMPLIANT if the `EncryptionAtRestOptions` field is not enabled.

> **Note**
>
> The rule does not evaluate Elasticsearch domains.

Identifier: OPENSEARCH_ENCRYPTED_AT_REST

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-https-required

Checks whether connections to OpenSearch domains are using HTTPS. The rule is NON_COMPLIANT if the Amazon OpenSearch domain 'EnforceHTTPS' is not 'true' or is 'true' and 'TLSSecurityPolicy' is not in '`tlsPolicies`'.

Identifier: OPENSEARCH_HTTPS_REQUIRED

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

tlsPolicies (Optional), Type: CSV

Comma-separated list of TLS security policies to check against the Amazon OpensSearch domain.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-in-vpc-only

Checks if Amazon OpenSearch Service domains are in an Amazon Virtual Private Cloud (VPC). The rule is NON_COMPLIANT if an OpenSearch Service domain endpoint is public.

> **Note**
>
> The rule does not evaluate Elasticsearch domains.

Identifier: OPENSEARCH_IN_VPC_ONLY

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-logs-to-cloudwatch

Checks if Amazon OpenSearch Service domains are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if logging is not configured.

> **Note**
>
> The rule does not evaluate Elasticsearch domains.

Identifier: OPENSEARCH_LOGS_TO_CLOUDWATCH

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

logTypes (Optional), Type: CSV

Comma-separated list of logs that are enabled. Valid values are 'search', 'index', 'error'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-node-to-node-encryption-check

Check if Amazon OpenSearch Service nodes are encrypted end to end. The rule is NON_COMPLIANT if the node-to-node encryption is not enabled on the domain

> **Note**
>
> The rule does not evaluate Elasticsearch domains.

Identifier: OPENSEARCH_NODE_TO_NODE_ENCRYPTION_CHECK

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-primary-node-fault-tolerance

Checks if Amazon OpenSearch Service domains are configured with at least three dedicated primary nodes. The rule is NON_COMPLIANT for an OpenSearch Service domain if 'DedicatedMasterEnabled' is set to 'false', or 'DedicatedMasterCount' is less than 3.

Identifier: OPENSEARCH_PRIMARY_NODE_FAULT_TOLERANCE

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

opensearch-update-check

Checks if Amazon OpenSearch Service version updates are available but not installed. The rule is NON_COMPLIANT for an OpenSearch domain if the latest software updates are not installed.

Identifier: OPENSEARCH_UPDATE_CHECK

Resource Types: AWS::OpenSearch::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rabbit-mq-supported-version

Checks if an Amazon MQ RabbitMQ broker is running on a specified minimum supported engine version. The rule is NON_COMPLIANT if the RabbitMQ broker is not running on the minimum supported engine version that you specify.

Identifier: RABBIT_MQ_SUPPORTED_VERSION

Resource Types: AWS::AmazonMQ::Broker

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

supportedEngineVersion, Type: String

> String value for the rule to check the minimum supported engine version for the RabbitMQ broker. RabbitMQ brokers use semantic versioning specification: X.Y.Z. X denotes the major version, Y represents the minor version, and Z denotes the patch version.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-aurora-mysql-audit-logging-enabled

Checks if Amazon Aurora MySQL-Compatible Edition clusters are configured to publish audit logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if Aurora MySQL-Compatible Edition clusters do not have audit log publishing configured.

Identifier: RDS_AURORA_MYSQL_AUDIT_LOGGING_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-aurora-postgresql-logs-to-cloudwatch

Checks if an Amazon Aurora PostgreSQL DB cluster is configured to publish PostgreSQL logs to Amazon CloudWatch Logs. This rule is NON_COMPLIANT if the DB cluster is not configured to publish PostgreSQL logs to Amazon CloudWatch Logs.

Identifier: RDS_AURORA_POSTGRESQL_LOGS_TO_CLOUDWATCH

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-automatic-minor-version-upgrade-enabled

Checks if Amazon Relational Database Service (Amazon RDS) database instances are configured for automatic minor version upgrades. The rule is NON_COMPLIANT if the value of 'autoMinorVersionUpgrade' is false.

Identifier: RDS_AUTOMATIC_MINOR_VERSION_UPGRADE_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
    "AutoMinorVersionUpgrade": BOOLEAN*,
    "Engine": String*
}
...
```

*For more information on valid values for these inputs, see AutoMinorVersionUpgrade and Engine in the AWS CloudFormation User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-auto-minor-version-upgrade-enable

Checks if automatic minor version upgrades are enabled for Amazon RDS Multi-AZ cluster deployments. The rule is NON_COMPLIANT if autoMinorVersionUpgrade is set to false.

Identifier: RDS_CLUSTER_AUTO_MINOR_VERSION_UPGRADE_ENABLE

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), US West (N. California), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-default-admin-check

Checks if an Amazon Relational Database Service (Amazon RDS) database cluster has changed the admin username from its default value. The rule is NON_COMPLIANT if the admin username is set to the default value.

Identifier: RDS_CLUSTER_DEFAULT_ADMIN_CHECK

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

validAdminUserNames (Optional), Type: CSV

> Comma-separated list of admin username(s) that Amazon RDS clusters can use. Cannot include 'postgres' or 'admin' as valid username(s) as these are default values.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-deletion-protection-enabled

Checks if an Amazon Relational Database Service (Amazon RDS) cluster has deletion protection enabled. The rule is NON_COMPLIANT if an Amazon RDS cluster does not have deletion protection enabled.

Identifier: RDS_CLUSTER_DELETION_PROTECTION_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-encrypted-at-rest

Checks if an Amazon Relational Database Service (Amazon RDS) cluster is encrypted at rest. The rule is NON_COMPLIANT if an Amazon RDS cluster is not encrypted at rest.

Identifier: RDS_CLUSTER_ENCRYPTED_AT_REST

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-iam-authentication-enabled

Checks if an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Identifier: RDS_CLUSTER_IAM_AUTHENTICATION_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-cluster-multi-az-enabled

Checks if Multi-Availability Zone (Multi-AZ) replication is enabled on Amazon Aurora and Multi-AZ DB clusters managed by Amazon Relational Database Service (Amazon RDS). The rule is NON_COMPLIANT if an Amazon RDS instance is not configured with Multi-AZ.

Identifier: RDS_CLUSTER_MULTI_AZ_ENABLED

Resource Types: AWS::RDS::DBCluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Melbourne) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-db-security-group-not-allowed

Checks if there are any Amazon Relational Database Service (Amazon RDS) DB security groups that are not the default DB security group. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.

Identifier: RDS_DB_SECURITY_GROUP_NOT_ALLOWED

Resource Types: AWS::RDS::DBSecurityGroup

Trigger type: Configuration changes

AWS Region: Only available in Europe (Ireland), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-enhanced-monitoring-enabled

Checks if enhanced monitoring is enabled for Amazon RDS instances. This rule is NON_COMPLIANT if '`monitoringInterval`' is '0' in the configuration item of the RDS instance, or if '`monitoringInterval`' does not match the rule parameter value.

Identifier: RDS_ENHANCED_MONITORING_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

monitoringInterval (Optional), Type: int

An integer value in seconds between points when enhanced monitoring metrics are collected for the database instance. The valid values are 1, 5, 10, 15, 30, and 60.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
    "MonitoringInterval": Integer*,
    "Engine": String*
}
...
```

*For more information on valid values for these inputs, see MonitoringInterval and Engine in the AWS CloudFormation User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-instance-default-admin-check

Checks if an Amazon Relational Database Service (Amazon RDS) database has changed the admin username from its default value. This rule will only run on RDS database instances. The rule is NON_COMPLIANT if the admin username is set to the default value.

Identifier: RDS_INSTANCE_DEFAULT_ADMIN_CHECK

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

validAdminUserNames (Optional), Type: CSV

Comma-separated list of admin username(s) that Amazon RDS instances can use. (Cannot include 'postgres' or 'admin' as valid username(s) as these are default values.)

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-instance-deletion-protection-enabled

Checks if an Amazon Relational Database Service (Amazon RDS) instance has deletion protection enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have deletion protection enabled; for example, deletionProtection is set to false.

> **Warning**
> Some RDS DB instances within a Cluster (Aurora/DocumentDB) will show as non-compliant.

Identifier: RDS_INSTANCE_DELETION_PROTECTION_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

databaseEngines (Optional), Type: CSV

Comma-separated list of RDS database engines to include in the evaluation of the rule. For example, 'mysql, postgres, mariadb'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-instance-iam-authentication-enabled

Checks if an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.

> **Note**
>
> The DB Engine should be one of 'mysql', 'postgres', 'aurora', 'aurora-mysql', or 'aurora-postgresql'. The DB instance status should be one of 'available', 'backing-up', 'storage-optimization', or 'storage-full'.

Identifier: RDS_INSTANCE_IAM_AUTHENTICATION_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-instance-public-access-check

Checks if the Amazon Relational Database Service (Amazon RDS) instances are not publicly accessible. The rule is NON_COMPLIANT if the publiclyAccessible field is true in the instance configuration item.

Identifier: RDS_INSTANCE_PUBLIC_ACCESS_CHECK

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "PubliclyAccessible": BOOLEAN
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-instance-subnet-igw-check

Checks if RDS DB instances are deployed in a public subnet with a route to the internet gateway. The rule is NON_COMPLIANT if RDS DB instances is deployed in a public subnet

Identifier: RDS_INSTANCE_SUBNET_IGW_CHECK

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-in-backup-plan

Checks if Amazon Relational Database Service (Amazon RDS) databases are present in AWS Backup plans. The rule is NON_COMPLIANT if Amazon RDS databases are not included in any AWS Backup plan.

> **Note**
>
> The rule only applies to Amazon Aurora DB instances. DB clusters are not supported.

Identifier: RDS_IN_BACKUP_PLAN

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Relational Database Service (Amazon RDS). The rule is NON_COMPLIANT if the Amazon RDS instance does not have a corresponding recovery point created within the specified time period.

Identifier: RDS_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon RDS instances for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon RDS instance for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-logging-enabled

Checks if respective logs of Amazon Relational Database Service (Amazon RDS) are enabled. The rule is NON_COMPLIANT if any log types are not enabled.

> **Note**
>
> DB Instances that are not in 'available', 'backing-up', 'storage-optimization', or 'storage-full' status evaluate as `NOT_APPLICABLE`.

Identifier: RDS_LOGGING_ENABLED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

additionalLogs (Optional), Type: StringMap

Comma-separated list of engine names and log type names. For example, "additionalLogs": "oracle: general, slowquery ; aurora: alert, slowquery"

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-mariadb-instance-encrypted-in-transit

Checks if connections to Amazon RDS for MariaDB DB instances with engine version greater than or equal to 10.5 use encryption in transit. The rule is NON_COMPLIANT if the DB parameter group is not in-sync or if require_secure_transport is not set to ON.

Identifier: RDS_MARIADB_INSTANCE_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-meets-restore-time-target

Checks if the restore time of Amazon Relational Database Service (Amazon RDS) instances meets specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon RDS instance is greater than maxRestoreTime minutes.

Identifier: RDS_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Amazon RDS instances for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Amazon RDS instance for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-multi-az-support

Checks whether high availability is enabled for your RDS DB instances.

In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone. For more information, see High Availability (Multi-AZ) in the *Amazon RDS User Guide*.

> **Note**
>
> This rule does not evaluate Amazon Aurora DB, Amazon DocumentDB, and Amazon Neptune DB instances.

Identifier: RDS_MULTI_AZ_SUPPORT

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
    "MultiAZ": BOOLEAN*,
    "Engine": String*
}
...
```

*For more information on valid values for these inputs, see MultiAZ and Engine in the AWS CloudFormation User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-mysql-instance-encrypted-in-transit

Checks if connections to Amazon RDS for MySQL database instances are configured to use encryption in transit. The rule is NON_COMPLIANT if the associated database parameter group is not in-sync or if the require_secure_transport parameter is not set to 1.

> **Note**
>
> The rule returns `NOT_APPLICABLE` if the Amazon RDS instance is part of an RDS cluster.

Identifier: RDS_MYSQL_INSTANCE_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-postgresql-logs-to-cloudwatch

Checks if an Amazon PostgreSQL DB instance is configured to publish logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the DB instance is not configured to publish logs to Amazon CloudWatch Logs.

Identifier: RDS_POSTGRESQL_LOGS_TO_CLOUDWATCH

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

logTypes (Optional), Type: CSV

> Comma-separated list of log types to be published to CloudWatch Logs. Valid values are: 'postgresql', 'upgrade'. Default value is 'postgresql'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-postgres-instance-encrypted-in-transit

Checks if connections to Amazon RDS PostgreSQL database instances are configured to use encryption in transit. The rule is NON_COMPLIANT if the associated database parameter group is not in-sync or if the rds.force_ssl parameter is not set to 1.

> **Note**
>
> The rule returns `NOT_APPLICABLE` if the Amazon RDS instance is part of an RDS cluster.

Identifier: RDS_POSTGRES_INSTANCE_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-proxy-tls-encryption

Checks if Amazon RDS proxies enforce TLS for all connections. The rule is NON_COMPLIANT if an Amazon RDS proxy does not have TLS enforced for all connections.

Identifier: RDS_PROXY_TLS_ENCRYPTION

Resource Types: AWS::RDS::DBProxy

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-resources-protected-by-backup-plan

Checks if Amazon Relational Database Service (Amazon RDS) instances are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon RDS Database instance is not covered by a backup plan.

Identifier: RDS_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for Amazon RDS instances for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Amazon RDS instance for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-snapshots-public-prohibited

Checks if Amazon Relational Database Service (Amazon RDS) snapshots are public. The rule is NON_COMPLIANT if any existing and new Amazon RDS snapshots are public.

> **Note**
>
> It can take up to 12 hours for compliance results to be captured.

Identifier: RDS_SNAPSHOTS_PUBLIC_PROHIBITED

Resource Types: AWS::RDS::DBSnapshot, AWS::RDS::DBClusterSnapshot

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Africa (Cape Town), Asia Pacific (Melbourne), Europe (Milan), Israel (Tel Aviv), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-snapshot-encrypted

Checks if Amazon Relational Database Service (Amazon RDS) DB snapshots are encrypted. The rule is NON_COMPLIANT if the Amazon RDS DB snapshots are not encrypted.

Identifier: RDS_SNAPSHOT_ENCRYPTED

Resource Types: AWS::RDS::DBSnapshot, AWS::RDS::DBClusterSnapshot

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-sqlserver-encrypted-in-transit

Checks if connections to Amazon RDS SQL server database instances are configured to use encryption in transit. The rule is NON_COMPLIANT if the DB parameter force_ssl for the parameter group is not set to 1 or the ApplyStatus parameter is not 'in-sync'.

Identifier: RDS_SQLSERVER_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RDS::DBInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-sql-server-logs-to-cloudwatch

Checks if an Amazon SQL Server DB instance is configured to publish logs to Amazon CloudWatch Logs. This rule is NON_COMPLIANT if the DB instance is not configured to publish logs to Amazon CloudWatch Logs.

Identifier: RDS_SQL_SERVER_LOGS_TO_CLOUDWATCH

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

logTypes (Optional), Type: CSV

> logTypes - (Optional): Comma-separated list of log types to be published to CloudWatch Logs. Valid values are: 'error', 'agent'. Default value is 'error', 'agent'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

rds-storage-encrypted

Checks if storage encryption is enabled for your Amazon Relational Database Service (Amazon RDS) DB instances. The rule is NON_COMPLIANT if storage encryption is not enabled.

Identifier: RDS_STORAGE_ENCRYPTED

Resource Types: AWS::RDS::DBInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

kmsKeyId (Optional), Type: String

KMS key ID or Amazon Resource Name (ARN) used to encrypt the storage.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "StorageEncrypted": BOOLEAN
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-audit-logging-enabled

Checks if Amazon Redshift clusters are logging audits to a specific bucket. The rule is NON_COMPLIANT if audit logging is not enabled for a Redshift cluster or if the '`bucketNames`' parameter is provided but the audit logging destination does not match.

Identifier: REDSHIFT_AUDIT_LOGGING_ENABLED

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

bucketNames (Optional), Type: CSV

Comma-separated list of Amazon S3 bucket names for storing audit logs.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-backup-enabled

Checks that Amazon Redshift automated snapshots are enabled for clusters. The rule is NON_COMPLIANT if the value for `automatedSnapshotRetentionPeriod` is greater than `MaxRetentionPeriod` or less than `MinRetentionPeriod` or the value is 0.

Identifier: REDSHIFT_BACKUP_ENABLED

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

MinRetentionPeriod (Optional), Type: int

Minimum value for the retention period. Minimum value is 1.

MaxRetentionPeriod (Optional), Type: int

Maximum value for the retention period. Maximum value is 35.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-configuration-check

Checks if Amazon Redshift clusters have the specified settings. The rule is NON_COMPLIANT if the Amazon Redshift cluster is not encrypted or encrypted with another key, or if a cluster does not have audit logging enabled.

Identifier: REDSHIFT_CLUSTER_CONFIGURATION_CHECK

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Mexico (Central), Asia Pacific (Taipei), Canada West (Calgary), Europe (Spain) Region

Parameters:

clusterDbEncrypted, Type: boolean, Default: true

Database encryption is enabled.

loggingEnabled, Type: boolean, Default: true

Audit logging is enabled.

nodeTypes (Optional), Type: CSV, Default: dc1.large

Specify node type.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-kms-enabled

Checks if Amazon Redshift clusters are using a specified AWS Key Management Service (AWS KMS) key for encryption. The rule is COMPLIANT if encryption is enabled and the cluster is encrypted with the key provided in the `kmsKeyArn` parameter. The rule is NON_COMPLIANT if the cluster is not encrypted or encrypted with another key.

Identifier: REDSHIFT_CLUSTER_KMS_ENABLED

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of AWS KMS key Amazon Resource Names (ARNs) used in Amazon Redshift clusters for encryption.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-maintenancesettings-check

Checks if Amazon Redshift clusters have the specified maintenance settings. The rule is NON_COMPLIANT if the automatic upgrades to major version is disabled.

Identifier: REDSHIFT_CLUSTER_MAINTENANCESETTINGS_CHECK

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

allowVersionUpgrade, Type: boolean, Default: true

Allow version upgrade is enabled.

preferredMaintenanceWindow (Optional), Type: String

Scheduled maintenance window for clusters (for example, Mon:09:30-Mon:10:00).

automatedSnapshotRetentionPeriod (Optional), Type: int, Default: 1

Number of days to retain automated snapshots.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
    "AutomatedSnapshotRetentionPeriod": Integer*,
    "PreferredMaintenanceWindow": String*,
    "AllowVersionUpgrade": BOOLEAN*
}
...
```

*For more information on valid values for these inputs, see AutomatedSnapshotRetentionPeriod, PreferredMaintenanceWindow, and AllowVersionUpgrade in the AWS CloudFormation User Guide.

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-parameter-group-tagged

Checks if Amazon Redshift cluster parameter groups have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: REDSHIFT_CLUSTER_PARAMETER_GROUP_TAGGED

Resource Types: AWS::Redshift::ClusterParameterGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-public-access-check

Checks if Amazon Redshift clusters are not publicly accessible. The rule is NON_COMPLIANT if the publiclyAccessible field is True in the cluster configuration item.

Identifier: REDSHIFT_CLUSTER_PUBLIC_ACCESS_CHECK

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration

schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "PubliclyAccessible": BOOLEAN
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-cluster-subnet-group-multi-az

Checks If Amazon Redshift subnet groups contain subnets from more than one Availability Zone. The rule is NON_COMPLIANT if an Amazon Redshift subnet group does not contain subnets from at least two different Availability Zones.

Identifier: REDSHIFT_CLUSTER_SUBNET_GROUP_MULTI_AZ

Resource Types: AWS::Redshift::ClusterSubnetGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-default-admin-check

Checks if an Amazon Redshift cluster has changed the admin username from its default value. The rule is NON_COMPLIANT if the admin username for a Redshift cluster is set to “awsuser” or if the username does not match what is listed in parameter.

Identifier: REDSHIFT_DEFAULT_ADMIN_CHECK

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

validAdminUserNames (Optional), Type: CSV

> Comma-separated list of admin username(s) for Redshift clusters to use. Note: 'awsuser' is the default and not accepted.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-default-db-name-check

Checks if a Redshift cluster has changed its database name from the default value. The rule is NON_COMPLIANT if the database name for a Redshift cluster is set to “dev”, or if the optional parameter is provided and the database name does not match.

Identifier: REDSHIFT_DEFAULT_DB_NAME_CHECK

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

validDatabaseNames (Optional), Type: CSV

Comma-separated list of database name(s) for Redshift clusters.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-enhanced-vpc-routing-enabled

Checks if Amazon Redshift cluster has 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.

Identifier: REDSHIFT_ENHANCED_VPC_ROUTING_ENABLED

Resource Types: AWS::Redshift::Cluster

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-require-tls-ssl

Checks if Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. The rule is NON_COMPLIANT if any Amazon Redshift cluster has parameter require_SSL not set to true.

Identifier: REDSHIFT_REQUIRE_TLS_SSL

Resource Types: AWS::Redshift::Cluster, AWS::Redshift::ClusterParameterGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-default-admin-check

Checks if an Amazon Redshift Serverless Namespace has changed the admin username from its default value. The rule is NON_COMPLIANT if the admin username for a Redshift Serverless Namespace is set to “admin”.

Identifier: REDSHIFT_SERVERLESS_DEFAULT_ADMIN_CHECK

Resource Types: AWS::RedshiftServerless::Namespace

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-default-db-name-check

Checks if an Amazon Redshift Serverless namespace has changed its database name from the default value. The rule is NON_COMPLIANT if the database name for an Amazon Redshift Serverless namespace is set to `dev`.

Identifier: REDSHIFT_SERVERLESS_DEFAULT_DB_NAME_CHECK

Resource Types: AWS::RedshiftServerless::Namespace

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-namespace-cmk-encryption

Checks if Amazon Redshift Serverless namespaces are encrypted by customer managed AWS KMS keys. The rule is NON_COMPLIANT if a namespace is not encrypted by a customer managed key. Optionally, you can specify a list of KMS keys for rule to check.

Identifier: REDSHIFT_SERVERLESS_NAMESPACE_CMK_ENCRYPTION

Resource Types: AWS::RedshiftServerless::Namespace

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), Mexico (Central), Canada West (Calgary) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARNs) of customer managed keys for the rule to check. If provided, the rule is NON_COMPLIANT if an Amazon Redshift Serverless namespace is not encrypted with one of these KMS keys.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-publish-logs-to-cloudwatch

Checks if Amazon Redshift Serverless Namespace is configured to publish the following logs to Amazon CloudWatch Logs. This rule is NON_COMPLIANT if the Namespace is not configured to publish the following logs to Amazon CloudWatch Logs.

Identifier: REDSHIFT_SERVERLESS_PUBLISH_LOGS_TO_CLOUDWATCH

Resource Types: AWS::RedshiftServerless::Namespace

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

logType (Optional), Type: CSV

Comma-separated list of log types to be published to CloudWatch Logs. Valid values are 'connectionlog', 'userlog' Default value is 'connectionlog', 'userlog'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-workgroup-encrypted-in-transit

Checks if AWS Redshift Serverless workgroups have the require_ssl config parameter set to true. The rule is NON_COMPLIANT if require_ssl is set to false.

Identifier: REDSHIFT_SERVERLESS_WORKGROUP_ENCRYPTED_IN_TRANSIT

Resource Types: AWS::RedshiftServerless::Workgroup

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-workgroup-no-public-access

Checks if Amazon Redshift Serverless workgroups do not allow public access. The rule is NON_COMPLIANT if a workgroup has 'Turn on Public Accessible' enabled.

Identifier: REDSHIFT_SERVERLESS_WORKGROUP_NO_PUBLIC_ACCESS

Resource Types: AWS::RedshiftServerless::Workgroup

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Thailand), Africa (Cape Town), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Europe (Milan), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-serverless-workgroup-routes-within-vpc

Checks if Amazon Redshift Serverless workgroups route the network traffic through a VPC. The rule is NON_COMPLIANT if workgroups have 'Turn on Enhanced VPC routing' disabled.

Identifier: REDSHIFT_SERVERLESS_WORKGROUP_ROUTES_WITHIN_VPC

Resource Types: AWS::RedshiftServerless::Workgroup

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

redshift-unrestricted-port-access

Checks if security groups associated with an Amazon Redshift cluster have inbound rules that allow unrestricted incoming traffic. The rule is NON_COMPLIANT if there are inbound rules that allow unrestricted incoming traffic to the Redshift cluster port.

Identifier: REDSHIFT_UNRESTRICTED_PORT_ACCESS

Resource Types: AWS::Redshift::Cluster

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

required-tags

Checks if your resources have the tags that you specify. For example, you can check whether your Amazon EC2 instances have the `CostCenter` tag, while also checking if all your RDS instance have one set of Keys tag. Separate multiple values with commas. You can check up to 6 tags at a time.

The AWS-managed AWS Systems Manager automation document `AWS-SetRequiredTags` does not work as a remediation with this rule. You will need to create your own custom Systems Manager automation documentation for remediation.

Context: AWS allows you to assign metadata to AWS resources in the form of tags. Each tag is a label consisting of a key and an optional value to store information about the resource or data retained on that resource. For more information see, Building your tagging strategy.

You can use this rule to find resources in your account that were not launched with your desired configurations by specifying which resources should have tags and the expected value for each tag. You can also run remediation actions to fix tagging mistakes. However, this rule does not prevent you from creating resources with incorrect tags.

> **Note**
>
> AWS Config does not support recording associated tags for all resource types. To verify if AWS Config records tags in the configuration item (CI) for a specific resource type:

- Check that AWS Config correctly records the current configuration for the resource, excluding tags.
- Check that AWS Config refreshes the recorded configuration when a change is made to the resource.

Identifier: REQUIRED_TAGS

Resource Types: AWS::ACM::Certificate, AWS::AutoScaling::AutoScalingGroup, AWS::CloudFormation::Stack, AWS::CodeBuild::Project, AWS::DynamoDB::Table, AWS::EC2::CustomerGateway, AWS::EC2::Instance, AWS::EC2::InternetGateway, AWS::EC2::NetworkAcl, AWS::EC2::NetworkInterface, AWS::EC2::RouteTable, AWS::EC2::SecurityGroup, AWS::EC2::Subnet, AWS::EC2::Volume, AWS::EC2::VPC, AWS::EC2::VPNConnection, AWS::EC2::VPNGateway, AWS::ElasticLoadBalancing::LoadBalancer, AWS::ElasticLoadBalancingV2::LoadBalancer, AWS::RDS::DBInstance, AWS::RDS::DBSecurityGroup, AWS::RDS::DBSnapshot, AWS::RDS::DBSubnetGroup, AWS::RDS::EventSubscription, AWS::Redshift::Cluster, AWS::Redshift::ClusterParameterGroup, AWS::Redshift::ClusterSecurityGroup, AWS::Redshift::ClusterSnapshot, AWS::Redshift::ClusterSubnetGroup, AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

tag1Key, Type: String, Default: CostCenter

Key of the required tag.

tag1Value (Optional), Type: CSV

Optional value of the required tag. Separate multiple values with commas.

tag2Key (Optional), Type: String

Key of a second required tag.

tag2Value (Optional), Type: CSV

Optional value of the second required tag. Separate multiple values with commas.

tag3Key (Optional), Type: String

Key of a third required tag.

tag3Value (Optional), Type: CSV

Optional value of the third required tag. Separate multiple values with commas.

tag4Key (Optional), Type: String

Key of a fourth required tag.

tag4Value (Optional), Type: CSV

Optional value of the fourth required tag. Separate multiple values with commas.

tag5Key (Optional), Type: String

Key of a fifth required tag.

tag5Value (Optional), Type: CSV

Optional value of the fifth required tag. Separate multiple values with commas.

tag6Key (Optional), Type: String

Key of a sixth required tag.

tag6Value (Optional), Type: CSV

Optional value of the sixth required tag. Separate multiple values with commas.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

restricted-common-ports

> **Important**
>
> For this rule, the rule identifier (RESTRICTED_INCOMING_TRAFFIC) and rule name (restricted-common-ports) are different.

Checks if the security groups in use do not allow unrestricted incoming Transmission Control Protocol (TCP) traffic to specified ports. The rule is COMPLIANT if:

- Port access is blocked to all TCP traffic.
- Port access is open to TCP traffic through Inbound rules, where the source is either a single IPv4 address or a range of IPv4 addresses in CIDR notation which does not cover all IPv4 addresses ("0.0.0.0/0").
- Port access is open to TCP traffic through Inbound rules, where the source is either a single IPv6 address or a range of IPv6 addresses in CIDR notation which does not cover all IPv6 addresses ("::/0)").

The rule is NON_COMPLIANT if IP addresses for inbound TCP connections are not restricted to specified ports.

Identifier: RESTRICTED_INCOMING_TRAFFIC

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions

Parameters:

blockedPort1 (Optional), Type: int, Default: 20

Blocked TCP port number. The default of 20 corresponds to File Transfer Protocol (FTP) Data Transfer.

blockedPort2 (Optional), Type: int, Default: 21

Blocked TCP port number. The default of 21 corresponds to File Transfer Protocol (FTP) Command Control.

blockedPort3 (Optional), Type: int, Default: 3389

Blocked TCP port number. The default of 3389 corresponds to Remote Desktop Protocol (RDP).

blockedPort4 (Optional), Type: int, Default: 3306

Blocked TCP port number. The default of 3306 corresponds to MySQL protocol.

blockedPort5 (Optional), Type: int, Default: 4333

Blocked TCP port number. The default of 4333 corresponds to MySQL protocol.

blockedPorts (Optional), Type: CSV

Comma-separated list of blocked TCP port numbers. For example, 20, 21, 3306, 3389, and 4333.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

root-account-hardware-mfa-enabled

Checks if your AWS account is enabled to use multi-factor authentication (MFA) hardware device to sign in with root credentials. The rule is NON_COMPLIANT if any virtual MFA devices are permitted for signing in with root credentials.

> **Note**
>
> **Not Applicable for Accounts Without Root User Credentials**
> This rule returns `NOT_APPLICABLE` if root user credentials are not present.
> **Managed Rules and Global IAM Resource Types**
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: ROOT_ACCOUNT_HARDWARE_MFA_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

root-account-mfa-enabled

Checks if the root user of your AWS account requires multi-factor authentication for console sign-in. The rule is NON_COMPLIANT if the AWS Identity and Access Management (IAM) root account user does not have multi-factor authentication (MFA) enabled.

> **Note**
>
> **Not Applicable for Accounts Without Root User Credentials**
>
> This rule returns `NOT_APPLICABLE` if root user credentials are not present.
>
> **Managed Rules and Global IAM Resource Types**
>
> The global IAM resource types onboarded before February 2022 (`AWS::IAM::Group`, `AWS::IAM::Policy`, `AWS::IAM::Role`, and `AWS::IAM::User`) can only be recorded by AWS Config in AWS Regions where AWS Config was available before February 2022. These resource types cannot be recorded in Regions supported by AWS Config after February 2022. For a list of those Regions, see Recording AWS Resources | Global Resources.
>
> If you record a global IAM resource type in at least one Region, periodic rules that report compliance on the global IAM resource type will run evaluations in all Regions where the periodic rule is added, even if you have not enabled the recording of the global IAM resource type in the Region where the periodic rule was added.
>
> To avoid unnecessary evaluations, you should only deploy periodic rules that report compliance on a global IAM resource type to one of the supported Regions. For a list of

which managed rules are supported in which Regions, see List of AWS Config Managed Rules by Region Availability.

Identifier: ROOT_ACCOUNT_MFA_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

route53-query-logging-enabled

Checks if DNS query logging is enabled for your Amazon Route 53 public hosted zones. The rule is NON_COMPLIANT if DNS query logging is not enabled for your Amazon Route 53 public hosted zones.

Identifier: ROUTE53_QUERY_LOGGING_ENABLED

Resource Types: AWS::Route53::HostedZone

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-access-point-in-vpc-only

Checks if an Amazon S3 access point does not allow access from the internet (NetworkOrigin is VPC). The rule is NON_COMPLIANT if NetworkOrigin is Internet.

Identifier: S3_ACCESS_POINT_IN_VPC_ONLY

Resource Types: AWS::S3::AccessPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-access-point-public-access-blocks

Checks if Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Identifier: S3_ACCESS_POINT_PUBLIC_ACCESS_BLOCKS

Resource Types: AWS::S3::AccessPoint

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

excludedAccessPoints (Optional), Type: CSV

Comma-separated list of names for allowed public Amazon S3 access points.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-account-level-public-access-blocks

Checks if the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.

> **Note**
>
> If you are using this rule, ensure that S3 Block Public Access is enabled. The rule is change-triggered, so it will not be invoked unless S3 Block Public Access is enabled. If S3 Block Public Access is not enabled the rule returns INSUFFICIENT_DATA. This means that you still might have some public buckets. For more information about setting up S3 Block Public Access, see Blocking public access to your Amazon S3 storage.

Identifier: S3_ACCOUNT_LEVEL_PUBLIC_ACCESS_BLOCKS

Resource Types: AWS::S3::AccountPublicAccessBlock

Trigger type: Configuration changes (current status not checked, only evaluated when changes generate new events)

> **Note**
>
> This rule is only triggered by configuration changes for the specific region where the S3 endpoint is located. In all other regions, the rule is checked periodically. If a change was made in another region, there could be a delay before the rule returns NON_COMPLIANT.

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

IgnorePublicAcls (Optional), Type: String, Default: True

IgnorePublicAcls is enforced or not, default True

BlockPublicPolicy (Optional), Type: String, Default: True

BlockPublicPolicy is enforced or not, default True

BlockPublicAcls (Optional), Type: String, Default: True

BlockPublicAcls is enforced or not, default True

RestrictPublicBuckets (Optional), Type: String, Default: True

RestrictPublicBuckets is enforced or not, default True

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-account-level-public-access-blocks-periodic

Checks if the required public access block settings are configured at the account level. The rule is NON_COMPLIANT if the configuration item does not match one or more settings from parameters (or default).

Identifier: S3_ACCOUNT_LEVEL_PUBLIC_ACCESS_BLOCKS_PERIODIC

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

IgnorePublicAcls (Optional), Type: String

IgnorePublicAcls is enforced or not, default True

BlockPublicPolicy (Optional), Type: String

BlockPublicPolicy is enforced or not, default True

BlockPublicAcls (Optional), Type: String

BlockPublicAcls is enforced or not, default True

RestrictPublicBuckets (Optional), Type: String

RestrictPublicBuckets is enforced or not, default True

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-acl-prohibited

Checks if Amazon Simple Storage Service (Amazon S3) Buckets allow user permissions through access control lists (ACLs). The rule is NON_COMPLIANT if ACLs are configured for user access in Amazon S3 Buckets.

Identifier: S3_BUCKET_ACL_PROHIBITED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-blacklisted-actions-prohibited

Checks if an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS

accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any `s3:GetBucket*` actions and `s3:DeleteObject` on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

> **Note**
>
> The rule will only check for entities in the Principal property and does not take into account any conditionals under the Condition property in a policy

Identifier: S3_BUCKET_BLACKLISTED_ACTIONS_PROHIBITED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Hyderabad), Europe (Spain) Region

Parameters:

blacklistedActionPattern, Type: CSV

Comma-separated list of blacklisted action patterns, for example, s3:GetBucket* and s3:DeleteObject.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-cross-region-replication-enabled

Checks if you have enabled S3 Cross-Region Replication for your Amazon S3 buckets. The rule is NON_COMPLIANT if there are no replication rules enabled for Cross-Region Replication.

Identifier: S3_BUCKET_CROSS_REGION_REPLICATION_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-default-lock-enabled

Checks if the S3 bucket has lock enabled, by default. The rule is NON_COMPLIANT if the lock is not enabled.

Identifier: S3_BUCKET_DEFAULT_LOCK_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

mode (Optional), Type: String

mode: (optional): A mode parameter with valid values of GOVERNANCE or COMPLIANCE.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-level-public-access-prohibited

Checks if S3 buckets are publicly accessible. The rule is NON_COMPLIANT if an S3 bucket is not listed in the `excludedPublicBuckets` parameter and bucket level settings are public.

Identifier: S3_BUCKET_LEVEL_PUBLIC_ACCESS_PROHIBITED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

excludedPublicBuckets (Optional), Type: CSV

Comma-separated list of known allowed public Amazon S3 bucket names.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-logging-enabled

Checks if logging is enabled for your S3 buckets. The rule is NON_COMPLIANT if logging is not enabled.

Identifier: S3_BUCKET_LOGGING_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

targetBucket (Optional), Type: String

Target S3 bucket for storing server access logs.

targetPrefix (Optional), Type: String

Prefix of the S3 bucket for storing server access logs.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration

schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "BucketName": "amzn-s3-demo-bucket",
   "LoggingConfiguration": {
         "DestinationBucketName": "amzn-s3-demo-destination-bucket",
         "LogFilePrefix":"my-log"
   }
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-mfa-delete-enabled

Checks if MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Identifier: S3_BUCKET_MFA_DELETE_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-policy-grantee-check

Checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or VPCs that you provide. The rule is COMPLIANT if a bucket policy is not present.

For example, if the input parameter to the rule is the list of two principals: `111122223333` and `444455556666` and the bucket policy specifies that only `111122223333` can access the bucket, then the rule is COMPLIANT. With the same input parameters: If the bucket policy specifies that `111122223333` and `444455556666` can access the bucket, it is also COMPLIANT.

However, if the bucket policy specifies that `999900009999` can access the bucket, the rule is NON_COMPLIANT.

> **Note**
>
> If a bucket policy contains more than one statement, each statement in the bucket policy is evaluated against this rule.

Identifier: S3_BUCKET_POLICY_GRANTEE_CHECK

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

awsPrincipals (Optional), Type: CSV

Comma-separated list of principals such as IAM User ARNs, IAM Role ARNs, and AWS accounts. You must provide the full ARN or use partial matching. For example, "arn:aws:iam::*AccountID*:role/*role_name*" or "arn:aws:iam::*AccountID*:role/*". If the provided value is not an exact match with the principal ARN specified in the bucket policy, the rule is NON_COMPLIANT.

servicePrincipals (Optional), Type: CSV

Comma-separated list of service principals, for example 'cloudtrail.amazonaws.com, lambda.amazonaws.com'.

federatedUsers (Optional), Type: CSV

Comma-separated list of identity providers for web identity federation such as Amazon Cognito and SAML identity providers. For example 'cognito-identity.amazonaws.com, arn:aws:iam::111122223333:saml-provider/my-provider'.

ipAddresses (Optional), Type: CSV

Comma-separated list of CIDR formatted IP addresses, for example '10.0.0.1, 192.168.1.0/24, 2001:db8::/32'.

vpcIds (Optional), Type: CSV

Comma-separated list of Amazon Virtual Private Clouds (Amazon VPC) IDs, for example 'vpc-1234abc0, vpc-ab1234c0'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-policy-not-more-permissive

Checks if your Amazon Simple Storage Service bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.

> **Note**
>
> If you provide an invalid parameter value, you will see the following error: Value for controlPolicy parameter must be an Amazon S3 bucket policy.

Identifier: S3_BUCKET_POLICY_NOT_MORE_PERMISSIVE

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

controlPolicy, Type: String

Amazon S3 bucket policy that defines an upper bound on the permissions of your S3 buckets. The policy can be a maximum of 1024 characters long.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-public-read-prohibited

Checks if your Amazon S3 buckets do not allow public read access. The rule checks the Block Public Access settings, the bucket policy, and the bucket access control list (ACL).

The rule is compliant when both of the following are true:

- The Block Public Access setting restricts public policies or the bucket policy does not allow public read access.
- The Block Public Access setting restricts public ACLs or the bucket ACL does not allow public read access.

The rule is noncompliant when:

- If the Block Public Access setting does not restrict public policies, AWS Config evaluates whether the policy allows public read access. If the policy allows public read access, the rule is noncompliant.
- If the Block Public Access setting does not restrict public bucket ACLs, AWS Config evaluates whether the bucket ACL allows public read access. If the bucket ACL allows public read access, the rule is noncompliant.

> **Note**
>
> To be considered non-public, an S3 bucket policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: S3_BUCKET_PUBLIC_READ_PROHIBITED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-public-write-prohibited

Checks if your Amazon S3 buckets do not allow public write access. The rule checks the Block Public Access settings, the bucket policy, and the bucket access control list (ACL).

The rule is compliant when both of the following are true:

- The Block Public Access setting restricts public policies or the bucket policy does not allow public write access.
- The Block Public Access setting restricts public ACLs or the bucket ACL does not allow public write access.

The rule is noncompliant when:

- If the Block Public Access setting does not restrict public policies, AWS Config evaluates whether the policy allows public write access. If the policy allows public write access, the rule is noncompliant.
- If the Block Public Access setting does not restrict public bucket ACLs, AWS Config evaluates whether the bucket ACL allows public write access. If the bucket ACL allows public write access, the rule is noncompliant.

> **Note**
>
> This rule does not evaluate changes to account level public block access. To check if the required public access block settings are configured from the account level, see s3-account-level-public-access-blocks and s3-account-level-public-access-blocks-periodic.

> **Note**
>
> To be considered non-public, an S3 bucket policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: S3_BUCKET_PUBLIC_WRITE_PROHIBITED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-replication-enabled

Checks if S3 buckets have replication rules enabled. The rule is NON_COMPLIANT if an S3 bucket does not have a replication rule or has a replication rule that is not enabled.

Identifier: S3_BUCKET_REPLICATION_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

ReplicationType (Optional), Type: String

Accepted values: 'CROSS-REGION' and 'SAME-REGION'. Enter 'CROSS-REGION' for the rule to check that all buckets have only Cross-Region Replication enabled. Enter 'SAME-REGION' for the rule to check that all buckets have only Same-Region Replication enabled.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-server-side-encryption-enabled

Checks if your Amazon S3 bucket either has the Amazon S3 default encryption enabled or that the Amazon S3 bucket policy explicitly denies `put-object` requests without server side encryption that uses AES-256 or AWS Key Management Service. The rule is NON_COMPLIANT if your Amazon S3 bucket is not encrypted by default.

Identifier: S3_BUCKET_SERVER_SIDE_ENCRYPTION_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Europe (Spain) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-ssl-requests-only

Checks if S3 buckets have policies that require requests to use SSL/TLS. The rule is NON_COMPLIANT if any S3 bucket has policies allowing HTTP requests.

Identifier: S3_BUCKET_SSL_REQUESTS_ONLY

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-tagged

Checks if Amazon S3 buckets have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: S3_BUCKET_TAGGED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-bucket-versioning-enabled

Checks if versioning is enabled for your S3 buckets. Optionally, the rule checks if MFA delete is enabled for your S3 buckets.

Identifier: S3_BUCKET_VERSIONING_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

isMfaDeleteEnabled (Optional), Type: String

MFA delete is enabled for your S3 buckets.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-default-encryption-kms

Checks if the S3 buckets are encrypted with AWS Key Management Service (AWS KMS). The rule is NON_COMPLIANT if the S3 bucket is not encrypted with an AWS KMS key.

Identifier: S3_DEFAULT_ENCRYPTION_KMS

Resource Types: AWS::S3::Bucket, AWS::KMS::Key

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma separated list of AWS KMS key ARNs allowed for encrypting Amazon S3 Buckets.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-event-notifications-enabled

Checks if Amazon S3 Events Notifications are enabled on an S3 bucket. The rule is NON_COMPLIANT if S3 Events Notifications are not set on a bucket, or if the event type or destination do not match the `eventTypes` and destinationArn parameters.

Identifier: S3_EVENT_NOTIFICATIONS_ENABLED

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

destinationArn (Optional), Type: String

The Amazon Resource Name (ARN) of the destination for the event notification (Amazon SNS topic, AWS Lambda, Amazon SQS Queue).

eventTypes (Optional), Type: CSV

Comma-separated list of the preferred Amazon S3 event types

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-last-backup-recovery-point-created

Checks if a recovery point was created for Amazon Simple Storage Service (Amazon S3). The rule is NON_COMPLIANT if the Amazon S3 bucket does not have a corresponding recovery point created within the specified time period.

Identifier: S3_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::S3::Bucket

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon S3 bucket for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

Name of Amazon S3 bucket for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-lifecycle-policy-check

Checks if a lifecycle rule is configured for an Amazon Simple Storage Service (Amazon S3) bucket. The rule is NON_COMPLIANT if there is no active lifecycle configuration rules or the configuration does not match with the parameter values.

Identifier: S3_LIFECYCLE_POLICY_CHECK

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

targetTransitionDays (Optional), Type: int

Number of days after object creation when objects are transitioned to a specified storage class (for example, 30 days).

targetExpirationDays (Optional), Type: int

Number of days after object creation when objects are deleted (for example, 395 days).

targetTransitionStorageClass (Optional), Type: String

Destination storage class type. For example, Amazon S3 Standard-Infrequent Access (S3 Standard-IA). For more information, see Understanding and managing Amazon S3 storage classes.

targetPrefix (Optional), Type: String

Amazon S3 Object prefix to identify one or more objects.

bucketNames (Optional), Type: CSV

Comma-separated list of Amazon S3 bucket names that have lifecycle policy enabled.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-meets-restore-time-target

Checks if the restore time of Amazon Simple Storage Service (Amazon S3) buckets meets the specified duration. The rule is NON_COMPLIANT if LatestRestoreExecutionTimeMinutes of an Amazon S3 bucket is greater than maxRestoreTime minutes.

Identifier: S3_MEETS_RESTORE_TIME_TARGET

Resource Types: AWS::S3::Bucket

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

maxRestoreTime, Type: int

Numerical value for the maximum allowed restore runtime.

resourceTags (Optional), Type: String

Tags of Amazon S3 bucket for the rule to check, in JSON format.

resourceId (Optional), Type: String

Name of Amazon S3 bucket for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-resources-in-logically-air-gapped-vault

Checks if Amazon Simple Storage Service (Amazon S3) buckets are in a logically air-gapped vault. The rule is NON_COMPLIANT if an Amazon S3 bucket is not in a logically air-gapped vault within the specified time period.

Identifier: S3_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::S3::Bucket

Trigger type: Periodic

AWS Region: Only available in Europe (Stockholm), Middle East (Bahrain), Asia Pacific (Mumbai), Europe (Paris), US East (Ohio), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Seoul), Asia Pacific (Osaka), Europe (London), Asia Pacific (Tokyo), US West (Oregon), US West (N. California), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Amazon S3 bucket for the rule to check, in JSON format.

resourceId (Optional), Type: String

Name of Amazon S3 bucket for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-resources-protected-by-backup-plan

Checks if Amazon Simple Storage Service (Amazon S3) buckets are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon S3 bucket is not covered by a backup plan.

Identifier: S3_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::S3::Bucket

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for Amazon S3 buckets for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

Name of Amazon S3 bucket for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

s3-version-lifecycle-policy-check

Checks if Amazon Simple Storage Service (Amazon S3) version enabled buckets have lifecycle policy configured. The rule is NON_COMPLIANT if Amazon S3 lifecycle policy is not enabled.

Identifier: S3_VERSION_LIFECYCLE_POLICY_CHECK

Resource Types: AWS::S3::Bucket

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

bucketNames (Optional), Type: CSV

Comma-separated list of Amazon S3 bucket names that have lifecycle policy enabled.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-app-image-config-tagged

Checks if Amazon SageMaker app image configs have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: SAGEMAKER_APP_IMAGE_CONFIG_TAGGED

Resource Types: AWS::SageMaker::AppImageConfig

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-domain-in-vpc

Checks if an Amazon SageMaker domain uses a customer owned Amazon Virtual Private Cloud (VPC) for non-EFS traffic. The rule is NON_COMPLIANT if configuration.AppNetworkAccessType is not set to VpcOnly.

Identifier: SAGEMAKER_DOMAIN_IN_VPC

Resource Types: AWS::SageMaker::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-domain-tagged

Checks if Amazon SageMaker domains have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: SAGEMAKER_DOMAIN_TAGGED

Resource Types: AWS::SageMaker::Domain

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-endpoint-configuration-kms-key-configured

Checks if AWS Key Management Service (AWS KMS) key is configured for an Amazon SageMaker endpoint configuration. The rule is NON_COMPLIANT if 'KmsKeyId' is not specified for the Amazon SageMaker endpoint configuration.

Identifier: SAGEMAKER_ENDPOINT_CONFIGURATION_KMS_KEY_CONFIGURED

Resource Types: AWS::SageMaker::EndpointConfig

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: String

Comma-separated list of specific AWS KMS key ARNs allowed for an Amazon SageMaker endpoint configuration.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-endpoint-config-prod-instance-count

Checks if Amazon SageMaker endpoint configurations have production variants `InitialInstanceCount` set to a value greater than 1. The rule is NON_COMPLIANT if production variants `InitialInstanceCount` is equal to 1.

Identifier: SAGEMAKER_ENDPOINT_CONFIG_PROD_INSTANCE_COUNT

Resource Types: AWS::SageMaker::EndpointConfig

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-feature-group-tagged

Checks if Amazon SageMaker feature groups have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: SAGEMAKER_FEATURE_GROUP_TAGGED

Resource Types: AWS::SageMaker::FeatureGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-image-description

Checks if Amazon SageMaker images have a description. The rule is NON_COMPLIANT if configuration.ImageDescription does not exist.

Identifier: SAGEMAKER_IMAGE_DESCRIPTION

Resource Types: AWS::SageMaker::Image

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS

GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-image-tagged

Checks if Amazon SageMaker images have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: SAGEMAKER_IMAGE_TAGGED

Resource Types: AWS::SageMaker::Image

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-model-in-vpc

Checks if an Amazon SageMaker model uses an Amazon Virtual Private Cloud (Amazon VPC) for container traffic. The rule is NON_COMPLIANT if configuration.VpcConfig does not exist.

Identifier: SAGEMAKER_MODEL_IN_VPC

Resource Types: AWS::SageMaker::Model

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-model-isolation-enabled

Checks if an Amazon SageMaker model has network isolation enabled. The rule is NON_COMPLIANT if configuration.EnableNetworkIsolation is false.

Identifier: SAGEMAKER_MODEL_ISOLATION_ENABLED

Resource Types: AWS::SageMaker::Model

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-notebook-instance-inside-vpc

Checks if an Amazon SageMaker notebook instance is launched within a VPC or within a list of approved subnets. The rule is NON_COMPLIANT if a notebook instance is not launched within a VPC or if its subnet ID is not included in the parameter list.

Identifier: SAGEMAKER_NOTEBOOK_INSTANCE_INSIDE_VPC

Resource Types: AWS::SageMaker::NotebookInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

SubnetIds (Optional), Type: CSV

Comma-separated list of subnet IDs that notebook instances can be launched in.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-notebook-instance-kms-key-configured

Checks if an AWS Key Management Service (AWS KMS) key is configured for an Amazon SageMaker notebook instance. The rule is NON_COMPLIANT if 'KmsKeyId' is not specified for the SageMaker notebook instance.

Identifier: SAGEMAKER_NOTEBOOK_INSTANCE_KMS_KEY_CONFIGURED

Resource Types: AWS::SageMaker::NotebookInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: String

Comma-separated list of AWS KMS key ARNs allowed for an Amazon SageMaker notebook instance.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-notebook-instance-platform-version

Checks if a Sagemaker Notebook Instance is configured to use a supported platform identifier version. The rule is NON_COMPLIANT if a Notebook Instance is not using the specified supported platform identifier version as specified in the parameter.

Identifier: SAGEMAKER_NOTEBOOK_INSTANCE_PLATFORM_VERSION

Resource Types: AWS::SageMaker::NotebookInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Canada West (Calgary) Region

Parameters:

supportedPlatformIdentifierVersions, Type: CSV

Comma-separated list of the supported platform identifier version for the rule to check.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-notebook-instance-root-access-check

Checks if the Amazon SageMaker RootAccess setting is enabled for Amazon SageMaker notebook instances. The rule is NON_COMPLIANT if the RootAccess setting is set to 'Enabled' for an Amazon SageMaker notebook instance.

Identifier: SAGEMAKER_NOTEBOOK_INSTANCE_ROOT_ACCESS_CHECK

Resource Types: AWS::SageMaker::NotebookInstance

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sagemaker-notebook-no-direct-internet-access

Checks if direct internet access is disabled for an Amazon SageMaker notebook instance. The rule is NON_COMPLIANT if a SageMaker notebook instance is internet-enabled.

Identifier: SAGEMAKER_NOTEBOOK_NO_DIRECT_INTERNET_ACCESS

Resource Types: AWS::SageMaker::NotebookInstance

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

secretsmanager-rotation-enabled-check

Checks if AWS Secrets Manager secret has rotation enabled. The rule also checks an optional `maximumAllowedRotationFrequency` parameter. If the parameter is specified, the rotation frequency of the secret is compared with the maximum allowed frequency. The rule is NON_COMPLIANT if the secret is not scheduled for rotation. The rule is also NON_COMPLIANT if the rotation frequency is higher than the number specified in the maximumAllowedRotationFrequency parameter.

> **Note**
>
> Re-evaluating this rule within 4 hours of the first evaluation will have no effect on the results.

Identifier: SECRETSMANAGER_ROTATION_ENABLED_CHECK

Resource Types: AWS::SecretsManager::Secret

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

maximumAllowedRotationFrequency (Optional), Type: int

Maximum allowed rotation frequency of the secret in days.

maximumAllowedRotationFrequencyInHours (Optional), Type: int

Maximum allowed rotation frequency of the secret in hours.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

secretsmanager-scheduled-rotation-success-check

Checks if AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

> **Note**
>
> **Recording delays**
> Evaluation results for this rule can be delayed for up to 2 days from a missed rotation date. For more immediate monitoring, see Monitor AWS Secrets Manager with Amazon CloudWatch in the *Secrets Manager User Guide*.
> **Secrets without rotation**
> The rule returns `NOT_APPLICABLE` for secrets that aren't configured for rotation.

Identifier: SECRETSMANAGER_SCHEDULED_ROTATION_SUCCESS_CHECK

Resource Types: AWS::SecretsManager::Secret

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

secretsmanager-secret-periodic-rotation

Checks if AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Identifier: SECRETSMANAGER_SECRET_PERIODIC_ROTATION

Resource Types: AWS::SecretsManager::Secret

Trigger type: Periodic

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

maxDaysSinceRotation (Optional), Type: int

Maximum number of days in which a secret can remain unchanged. The default value is 90 days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

secretsmanager-secret-unused

Checks if AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Context: It is recommended to routinely delete unused secrets. Unused secrets can be misused by former users who no longer need access to these secrets. Additionally, as more users gain access to a secret, it becomes increasingly possible that someone has misused a secret or has granted access to an unauthorized entity. Deleting unused secrets helps revoke secret access from users who no longer need it, and can reduce your cost of using AWS Secrets Manager.

Identifier: SECRETSMANAGER_SECRET_UNUSED

Resource Types: AWS::SecretsManager::Secret

Trigger type: Periodic

AWS Region: All supported AWS regions except Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

unusedForDays (Optional), Type: int

The number of days in which a secret can remain unused. The default value is 90 days.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

secretsmanager-using-cmk

Checks if all secrets in AWS Secrets Manager are encrypted using the AWS managed key (`aws/secretsmanager`) or a customer managed key that was created in AWS Key Management Service (AWS KMS). The rule is COMPLIANT if a secret is encrypted using a customer managed key. This rule is NON_COMPLIANT if a secret is encrypted using `aws/secretsmanager`.

> **Note**
>
> This rule does not have access to cross-account customer managed keys and evaluates secrets as NON_COMPLIANT when a cross-account key is used.

Identifier: SECRETSMANAGER_USING_CMK

Resource Types: AWS::SecretsManager::Secret

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

kmsKeyArns (Optional), Type: CSV

Comma-separated list of KMS key Amazon Resource Names (ARNs) to check if the keys are used in the encryption.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

securityhub-enabled

Checks if AWS Security Hub is enabled for an AWS Account. The rule is NON_COMPLIANT if AWS Security Hub is not enabled.

Identifier: SECURITYHUB_ENABLED

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

security-account-information-provided

Checks if you have provided security contact information for your AWS account contacts. The rule is NON_COMPLIANT if security contact information within the account is not provided.

Identifier: SECURITY_ACCOUNT_INFORMATION_PROVIDED

Resource Types: AWS::::Account

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

service-catalog-shared-within-organization

Checks if AWS Service Catalog shares portfolios to an organization (a collection of AWS accounts treated as a single unit) when integration is enabled with AWS Organizations. The rule is NON_COMPLIANT if the `Type` value of a share is `ACCOUNT`.

Identifier: SERVICE_CATALOG_SHARED_WITHIN_ORGANIZATION

Resource Types: AWS::ServiceCatalog::Portfolio

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

service-vpc-endpoint-enabled

Checks if Service Endpoint for the service provided in rule parameter is created for each Amazon Virtual Private Cloud (Amazon VPC). The rule is NON_COMPLIANT if an Amazon VPC doesn't have an Amazon VPC endpoint created for the service.

Identifier: SERVICE_VPC_ENDPOINT_ENABLED

Resource Types: AWS::EC2::VPC

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

serviceName, Type: String

The short name or suffix for the service. Note: To get a list of available service names or valid suffix list, use DescribeVpcEndpointServices.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ses-malware-scanning-enabled

Checks if malware and spam scanning on receiving messages is enabled for Amazon Simple Email Service (Amazon SES). The rule is NON_COMPLIANT if malware and spam scanning is not enabled.

Identifier: SES_MALWARE_SCANNING_ENABLED

Resource Types: AWS::SES::ReceiptRule

Trigger type: Periodic

AWS Region: Only available in Europe (Ireland), US East (N. Virginia), US West (Oregon) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

shield-advanced-enabled-autorenew

Checks if AWS Shield Advanced is enabled in your AWS account and this subscription is set to automatically renew. The rule is COMPLIANT if Shield Advanced is enabled and auto renew is enabled.

> **Note**
>
> The API endpoint of AWS Shield Advanced is only available in US East (N. Virginia) Region. This rule should only be scheduled to run in the US East (N. Virginia) Region.

Identifier: SHIELD_ADVANCED_ENABLED_AUTORENEW

Trigger type: Periodic

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

shield-drt-access

Checks if the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.

Identifier: SHIELD_DRT_ACCESS

Trigger type: Periodic

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sns-encrypted-kms

Checks if SNS topics are encrypted with AWS Key Management Service (AWS KMS). The rule is NON_COMPLIANT if an SNS topic is not encrypted with AWS KMS. Optionally, specify the key ARNs, the alias ARNs, the alias name, or the key IDs for the rule to check.

Identifier: SNS_ENCRYPTED_KMS

Resource Types: AWS::SNS::Topic

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

kmsKeyIds (Optional), Type: CSV

Comma-separated list of AWS KMS key Amazon Resource Names (ARNs), KMS alias ARNs, KMS alias names, or KMS key IDs for the rule to check.

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "KmsMasterKeyId": "my-kms-key-Id"
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sns-topic-message-delivery-notification-enabled

Checks if Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Identifier: SNS_TOPIC_MESSAGE_DELIVERY_NOTIFICATION_ENABLED

Resource Types: AWS::SNS::Topic

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sns-topic-no-public-access

Checks if the SNS topic access policy allows public access. The rule is NON_COMPLIANT if the SNS topic access policy allows public access.

> **Note**
>
> To be considered non-public, an SNS policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: SNS_TOPIC_NO_PUBLIC_ACCESS

Resource Types: AWS::SNS::Topic

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

sqs-queue-no-public-access

Checks if the SQS queue access policy allows public access. The rule is NON_COMPLIANT if the SQS queue access policy allows public access.

> **Note**
>
> To be considered non-public, an SQS policy must grant access only to fixed values. This means values that don't contain a wildcard or the following IAM policy element: Variables.

Identifier: SQS_QUEUE_NO_PUBLIC_ACCESS

Resource Types: AWS::SQS::Queue

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ssm-document-not-public

Checks if AWS Systems Manager documents owned by the account are public. The rule is NON_COMPLIANT if Systems Manager documents with the owner 'Self' are public.

Identifier: SSM_DOCUMENT_NOT_PUBLIC

Resource Types: AWS::SSM::Document

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Taipei), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

ssm-document-tagged

Checks if AWS Systems Manager documents have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: SSM_DOCUMENT_TAGGED

Resource Types: AWS::SSM::Document

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

step-functions-state-machine-logging-enabled

Checks if AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.

Identifier: STEP_FUNCTIONS_STATE_MACHINE_LOGGING_ENABLED

Resource Types: AWS::StepFunctions::StateMachine

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

cloudWatchLogGroupArns (Optional), Type: CSV

Comma-separated list of Amazon Resource Names (ARNs) for Amazon CloudWatch Logs log groups. The rule checks if the specified log groups are configured for your state machine logs.

logLevel (Optional), Type: String

The minimum log level for your state machine. Valid values include: ALL, ERROR, FATAL.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

storagegateway-last-backup-recovery-point-created

Checks if a recovery point was created for AWS Storage Gateway volumes. The rule is NON_COMPLIANT if the Storage Gateway volume does not have a corresponding recovery point created within the specified time period.

Identifier: STORAGEGATEWAY_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::StorageGateway::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Storage Gateway volumes for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of Storage Gateway volume for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

storagegateway-resources-in-logically-air-gapped-vault

Checks if AWS Storage Gateway volumes are in a logically air-gapped vault. The rule is NON_COMPLIANT if an AWS Storage Gateway volume is not in a logically air-gapped vault within the specified time period.

Identifier: STORAGEGATEWAY_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::StorageGateway::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of Storage Gateway volumes for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Storage Gateway volume for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

storagegateway-resources-protected-by-backup-plan

Checks if AWS Storage Gateway volumes are protected by a backup plan. The rule is NON_COMPLIANT if the Storage Gateway volume is not covered by a backup plan.

Identifier: STORAGEGATEWAY_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::StorageGateway::Volume

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for Storage Gateway Volumes for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of Storage Gateway volume for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

subnet-auto-assign-public-ip-disabled

Checks if Amazon Virtual Private Cloud (Amazon VPC) subnets are assigned a public IP address. The rule is COMPLIANT if Amazon VPC does not have subnets that are assigned a public IP address. The rule is NON_COMPLIANT if Amazon VPC has subnets that are assigned a public IP address.

Identifier: SUBNET_AUTO_ASSIGN_PUBLIC_IP_DISABLED

Resource Types: AWS::EC2::Subnet

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

Proactive Evaluation

For steps on how to run this rule in proactive mode, see Evaluating Your Resources with AWS Config Rules. For this rule to return COMPLIANT in proactive mode, the resource configuration schema for the StartResourceEvaluation API needs to include the following inputs, encoded as a string:

```
"ResourceConfiguration":
...
{
   "MapPublicIpOnLaunch": BOOLEAN
}
...
```

For more information on proactive evaluation, see Evaluation Mode.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-agreement-description

Checks if AWS Transfer Family agreements have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: TRANSFER_AGREEMENT_DESCRIPTION

Resource Types: AWS::Transfer::Agreement

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-agreement-tagged

Checks if AWS Transfer Family agreements have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: TRANSFER_AGREEMENT_TAGGED

Resource Types: AWS::Transfer::Agreement

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-certificate-description

Checks if AWS Transfer Family certificates have a description. The rule is NON_COMPLIANT if configuration.Description does not exist.

Identifier: TRANSFER_CERTIFICATE_DESCRIPTION

Resource Types: AWS::Transfer::Certificate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-certificate-tagged

Checks if AWS Transfer Family certificates have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: TRANSFER_CERTIFICATE_TAGGED

Resource Types: AWS::Transfer::Certificate

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-connector-logging-enabled

Checks if AWS Transfer Family Connector publishes logs to Amazon CloudWatch. The rule is NON_COMPLIANT if a Connector does not have a LoggingRole assigned.

Identifier: TRANSFER_CONNECTOR_LOGGING_ENABLED

Resource Types: AWS::Transfer::Connector

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), Asia Pacific (Thailand), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-connector-tagged

Checks if AWS Transfer Family connectors have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: TRANSFER_CONNECTOR_TAGGED

Resource Types: AWS::Transfer::Connector

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-family-server-no-ftp

Checks if a server created with AWS Transfer Family uses FTP for endpoint connection. The rule is NON_COMPLIANT if the server protocol for endpoint connection is FTP-enabled.

Identifier: TRANSFER_FAMILY_SERVER_NO_FTP

Resource Types: AWS::Transfer::Server

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-profile-tagged

Checks if AWS Transfer Family profiles have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: TRANSFER_PROFILE_TAGGED

Resource Types: AWS::Transfer::Profile

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

> Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-workflow-description

Checks if AWS Transfer Family workflows have a description. The rule is NON_COMPLIANT if configuration.Description does not exist or is an empty string.

Identifier: TRANSFER_WORKFLOW_DESCRIPTION

Resource Types: AWS::Transfer::Workflow

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

transfer-workflow-tagged

Checks if AWS Transfer Family workflows have tags. Optionally, you can specify tag keys. The rule is NON_COMPLIANT if there are no tags or if the specified tag keys are not present. The rule does not check for tags starting with 'aws:'.

Identifier: TRANSFER_WORKFLOW_TAGGED

Resource Types: AWS::Transfer::Workflow

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), China (Ningxia) Region

Parameters:

requiredKeyTags (Optional), Type: CSV

Comma-separated list of tag keys for the rule to check. If provided, the rule is NON_COMPLIANT if the evaluated resource does not contain these keys. Tag keys are case-sensitive. Tag keys starting with 'aws:' are not allowed.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

virtualmachine-last-backup-recovery-point-created

Checks if a recovery point was created for AWS Backup-Gateway VirtualMachines. The rule is NON_COMPLIANT if an AWS Backup-Gateway VirtualMachines does not have a corresponding recovery point created within the specified time period.

Identifier: VIRTUALMACHINE_LAST_BACKUP_RECOVERY_POINT_CREATED

Resource Types: AWS::BackupGateway::VirtualMachine

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of AWS Backup-Gateway VirtualMachines for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of AWS Backup-Gateway VirtualMachine for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 744 for hours, 31 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

virtualmachine-resources-in-logically-air-gapped-vault

Checks if AWS Backup-Gateway VirtualMachines are in a logically air-gapped vault. The rule is NON_COMPLIANT if an AWS Backup-Gateway VirtualMachines is not in a logically air-gapped vault within the specified time period.

Identifier: VIRTUALMACHINE_RESOURCES_IN_LOGICALLY_AIR_GAPPED_VAULT

Resource Types: AWS::BackupGateway::VirtualMachine

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags of AWS Backup-Gateway VirtualMachines for the rule to check, in JSON format.

resourceId (Optional), Type: String

ID of AWS Backup-Gateway VirtualMachine for the rule to check.

recoveryPointAgeValue (Optional), Type: int, Default: 1

Numerical value for maximum allowed age. No more than 2184 for hours, 91 for days.

recoveryPointAgeUnit (Optional), Type: String, Default: days

Unit of time for maximum allowed age. Accepted values: 'hours', 'days'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

virtualmachine-resources-protected-by-backup-plan

Checks if AWS Backup-Gateway VirtualMachines are protected by a backup plan. The rule is NON_COMPLIANT if the Backup-Gateway VirtualMachine is not covered by a backup plan.

Identifier: VIRTUALMACHINE_RESOURCES_PROTECTED_BY_BACKUP_PLAN

Resource Types: AWS::BackupGateway::VirtualMachine

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

resourceTags (Optional), Type: String

Tags for AWS Backup-Gateway VirtualMachines for the rule to check, in JSON format `{"tagkey" : "tagValue"}`.

resourceId (Optional), Type: String

ID of AWS Backup-Gateway VirtualMachine for the rule to check.

crossRegionList (Optional), Type: String

Comma-separated list of destination regions for the cross-region backup copy to be kept

crossAccountList (Optional), Type: String

Comma-separated list of destination accounts for cross-account backup copy to be kept

maxRetentionDays (Optional), Type: int

The maximum retention period in days for the Backup Vault Lock

minRetentionDays (Optional), Type: int

The minimum retention period in days for the Backup Vault Lock

backupVaultLockCheck (Optional), Type: String

Accepted values: 'True' or 'False'. Enter 'True' for the rule to check if the resource is backed up in a locked vault

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-default-security-group-closed

Checks if the default security group of any Amazon Virtual Private Cloud (Amazon VPC) does not allow inbound or outbound traffic. The rule is NON_COMPLIANT if the default security group has one or more inbound or outbound traffic rules.

> **Note**
>
> There may be a delay between when AWS Config records the deletion of related resources such as default security groups, which are deleted as part of the Amazon VPC deletion. As a result, even if all default security groups or other related resources have been deleted or remediated, the rule may report NON_COMPLIANT until the next account baselining process.

Identifier: VPC_DEFAULT_SECURITY_GROUP_CLOSED

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-endpoint-enabled

Checks if each service specified in the parameter has an Amazon VPC endpoint. The rule is NON_COMPLIANT if Amazon VPC does not have a VPC endpoint created for each specified service. Optionally, you can specify certain VPCs for the rule to check.

Identifier: VPC_ENDPOINT_ENABLED

Resource Types: AWS::EC2::VPC

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Osaka), Asia Pacific (Malaysia), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary) Region

Parameters:

serviceNames, Type: CSV

Comma-separated list of service names or endpoints. Example: "access-analyzer, appconfig, cloudtrail" or "com.amazonaws.region.access-analyzer". Use DescribeVpcEndpointServices for available names.

vpcIds (Optional), Type: CSV

Comma-separated list of Amazon VPC IDs for VPC endpoints. If provided, the rule is NON_COMPLIANT if the services specified in the serviceName parameter do not have one of these VPC endpoints.

scopeConfigResourceTypes (Optional), Type: CSV

Comma-separated list of AWS Config resource types for the rule to check. If specified, the rule returns a compliance status only if at least one specified resource is recorded in the account. For example: "AWS::SNS::Topic".

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-flow-logs-enabled

Checks if Amazon Virtual Private Cloud (Amazon VPC) flow logs are found and enabled for all Amazon VPCs. The rule is NON_COMPLIANT if flow logs are not enabled for at least one Amazon VPC.

Identifier: VPC_FLOW_LOGS_ENABLED

Resource Types: AWS::EC2::VPC

Trigger type: Periodic

AWS Region: All supported AWS regions

Parameters:

trafficType (Optional), Type: String

TrafficType of flow logs

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-network-acl-unused-check

Checks if there are unused network access control lists (network ACLs). The rule is COMPLIANT if each network ACL is associated with a subnet. The rule is NON_COMPLIANT if a network ACL is not associated with a subnet.

Identifier: VPC_NETWORK_ACL_UNUSED_CHECK

Resource Types: AWS::EC2::NetworkAcl

Trigger type: Configuration changes

AWS Region: All supported AWS regions

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-peering-dns-resolution-check

Checks if DNS resolution from accepter/requester VPC to private IP is enabled. The rule is NON_COMPLIANT if DNS resolution from accepter/requester VPC to private IP is not enabled.

Identifier: VPC_PEERING_DNS_RESOLUTION_CHECK

Resource Types: AWS::EC2::VPCPeeringConnection

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

vpcIds (Optional), Type: CSV

Comma-separated list of VPC IDs to be checked.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-sg-open-only-to-authorized-ports

Checks if security groups allowing unrestricted incoming traffic ('0.0.0.0/0' or '::/0') only allow inbound TCP or UDP connections on authorized ports. The rule is NON_COMPLIANT if such security groups do not have ports specified in the rule parameters.

> **Note**
>
> This rule evaluates Amazon EC2 security groups with ingress rule set to IPv4='0.0.0.0/0' or IPv6='::/'. If the security group does not have one of those destinations, this rule returns `NOT_APPLICABLE`.

Identifier: VPC_SG_OPEN_ONLY_TO_AUTHORIZED_PORTS

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Configuration changes and Periodic

AWS Region: All supported AWS regions except Asia Pacific (Melbourne) Region

Parameters:

authorizedTcpPorts (Optional), Type: String

Comma-separated list of TCP ports authorized to be open to 0.0.0.0/0 or ::/0. Ranges are defined by dash, for example, "443,1020-1025".

authorizedUdpPorts (Optional), Type: String

Comma-separated list of UDP ports authorized to be open to 0.0.0.0/0 or ::/0. Ranges are defined by dash, for example, "500,1020-1025".

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-sg-port-restriction-check

Checks if security groups restrict incoming traffic to restricted ports explicitly from 0.0.0.0/0 or ::/0. The rule is NON_COMPLIANT if security groups allow incoming traffic from 0.0.0.0/0 or ::/0 over TCP/UDP ports 22/3389 or as specified in parameters.

Identifier: VPC_SG_PORT_RESTRICTION_CHECK

Resource Types: AWS::EC2::SecurityGroup

Trigger type: Periodic

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Malaysia), Mexico (Central), Canada West (Calgary) Region

Parameters:

restrictPorts (Optional), Type: CSV

Comma-separated list of ports that should not be open for incoming traffic over the full IP range. Valid port numbers range from 0 to 65535. If not specified, the rule defaults to check for 22 and 3389.

protocolType (Optional), Type: String

The Transmission Protocol Type for the rule to check. Valid values include 'TCP', 'UDP', and 'ALL' (case-insensitive). If set to 'ALL', the rule will check for rules that use either 'TCP', 'UDP', or 'ALL' (-1) protocol. Default value is 'ALL'.

excludeExternalSecurityGroups (Optional), Type: boolean

Boolean flag to exclude the evaluation of external security groups. If set to 'true', the rule will not include external security groups in the evaluation. Otherwise, all security groups are evaluated if value is set to 'false.' Default value is 'true'.

ipType (Optional), Type: String

The Internet Protocol (IP) version for the rule to check. Valid values include 'IPv4', 'IPv6', and 'ALL' (case-insensitive). If not specified, the rule defaults to check for 'ALL'.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

vpc-vpn-2-tunnels-up

Checks if both virtual private network (VPN) tunnels provided by AWS Site-to-Site VPN are in UP status. The rule is NON_COMPLIANT if one or both tunnels are in DOWN status.

Identifier: VPC_VPN_2_TUNNELS_UP

Resource Types: AWS::EC2::VPNConnection

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Middle East (Bahrain), China (Beijing), Asia Pacific (Osaka), Israel (Tel Aviv), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

wafv2-logging-enabled

Checks if logging is enabled on AWS WAFv2 regional and global web access control lists (web ACLs). The rule is NON_COMPLIANT if the logging is enabled but the logging destination does not match the value of the parameter.

> **Note**
>
> **Amazon Security Lake Exception**
> This rule does not check logging done with Security Lake for AWS WAFV2 web ACLs.

Identifier: WAFV2_LOGGING_ENABLED

Resource Types: AWS::WAFv2::WebACL

Trigger type: Periodic

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Mexico (Central), Asia Pacific (Taipei) Region

Parameters:

KinesisFirehoseDeliveryStreamArns (Optional), Type: CSV

Comma separated list of Kinesis Firehose delivery stream ARNs

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

wafv2-rulegroup-logging-enabled

Checks if Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Context: AWS WAFV2 (Web Application Firewall version 2) allows you to create AWS WAF rules to protect your web applications from common web exploits and vulnerabilities. An AWS WAF rule group is a collection of AWS WAF rules that you can associate with a web ACL (Access Control List) to define the desired behavior for your web application traffic. For more information, see AWS WAF rules and Rule groups in the *AWS WAF Developer Guide*.

By configuring CloudWatch security metrics collection on AWS WAFV2 rules group, you can monitor security metrics such as successful or failed Distributed denial of service (DDoS), SQL injection, and Cross-site scripting (XSS) attacks. The security metrics collected can help you simplify your investigations.

> **Note**
>
> If there are no AWS WAF rules in the AWS WAFV2 rule group for the AWS Config managed rule to check, the AWS Config managed rule returns `NOT_APPLICABLE`.

Identifier: WAFV2_RULEGROUP_LOGGING_ENABLED

Resource Types: AWS::WAFv2::RuleGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

wafv2-rulegroup-not-empty

Checks if WAFv2 Rule Groups contain rules. The rule is NON_COMPLIANT if there are no rules in a WAFv2 Rule Group.

Identifier: WAFV2_RULEGROUP_NOT_EMPTY

Resource Types: AWS::WAFv2::RuleGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), Asia Pacific (Melbourne), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

wafv2-webacl-not-empty

Checks if a WAFv2 Web ACL contains any WAF rules or WAF rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rules or WAF rule groups.

Identifier: WAFV2_WEBACL_NOT_EMPTY

Resource Types: AWS::WAFv2::WebACL

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS

GovCloud (US-West), Mexico (Central), Canada West (Calgary), Europe (Spain), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-classic-logging-enabled

Checks if logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.

Identifier: WAF_CLASSIC_LOGGING_ENABLED

Resource Types: AWS::WAF::WebACL

Trigger type: Periodic

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

KinesisFirehoseDeliveryStreamArns (Optional), Type: CSV

Comma separated list of Amazon Kinesis stream ARN for AWS WAF logs.

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-global-rulegroup-not-empty

Checks if an AWS WAF Classic rule group contains any rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Identifier: WAF_GLOBAL_RULEGROUP_NOT_EMPTY

Resource Types: AWS::WAF::RuleGroup

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-global-rule-not-empty

Checks if an AWS WAF global rule contains any conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.

Identifier: WAF_GLOBAL_RULE_NOT_EMPTY

Resource Types: AWS::WAF::Rule

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-global-webacl-not-empty

Checks whether a WAF Global Web ACL contains any WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.

Identifier: WAF_GLOBAL_WEBACL_NOT_EMPTY

Resource Types: AWS::WAF::WebACL

Trigger type: Configuration changes

AWS Region: Only available in US East (N. Virginia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-regional-rulegroup-not-empty

Checks if WAF Regional rule groups contain any rules. The rule is NON_COMPLIANT if there are no rules present within a WAF Regional rule group.

Identifier: WAF_REGIONAL_RULEGROUP_NOT_EMPTY

Resource Types: AWS::WAFRegional::RuleGroup

Trigger type: Configuration changes

AWS Region: All supported AWS regions except China (Beijing), Asia Pacific (Thailand), Asia Pacific (Jakarta), Middle East (UAE), Asia Pacific (Hyderabad), Asia Pacific (Osaka), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Israel (Tel Aviv), Canada West (Calgary), Europe (Spain), China (Ningxia), Europe (Zurich) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-regional-rule-not-empty

Checks whether WAF regional rule contains conditions. This rule is COMPLIANT if the regional rule contains at least one condition and NON_COMPLIANT otherwise.

Identifier: WAF_REGIONAL_RULE_NOT_EMPTY

Resource Types: AWS::WAFRegional::Rule

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

waf-regional-webacl-not-empty

Checks if a WAF regional Web ACL contains any WAF rules or rule groups. The rule is NON_COMPLIANT if there are no WAF rules or rule groups present within a Web ACL.

Identifier: WAF_REGIONAL_WEBACL_NOT_EMPTY

Resource Types: AWS::WAFRegional::WebACL

Trigger type: Configuration changes

AWS Region: All supported AWS regions except Asia Pacific (Thailand), Asia Pacific (Malaysia), AWS GovCloud (US-East), AWS GovCloud (US-West), Mexico (Central), Canada West (Calgary) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

workspaces-root-volume-encryption-enabled

Checks if an Amazon WorkSpace volume has the root volume encryption settings set to enabled. This rule is NON_COMPLIANT if the encryption setting is not enabled for the root volume.

Identifier: WORKSPACES_ROOT_VOLUME_ENCRYPTION_ENABLED

Resource Types: AWS::WorkSpaces::Workspace

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Africa (Cape Town), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Seoul), Europe (London), Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

workspaces-user-volume-encryption-enabled

Checks if an Amazon WorkSpace volume has the user volume encryption settings set to enabled. This rule is NON_COMPLIANT if the encryption setting is not enabled for the user volume.

Identifier: WORKSPACES_USER_VOLUME_ENCRYPTION_ENABLED

Resource Types: AWS::WorkSpaces::Workspace

Trigger type: Configuration changes

AWS Region: Only available in Asia Pacific (Mumbai), Africa (Cape Town), Europe (Ireland), Europe (Frankfurt), South America (Sao Paulo), US East (N. Virginia), Asia Pacific (Seoul), Europe (London),

Asia Pacific (Tokyo), US West (Oregon), Asia Pacific (Singapore), Asia Pacific (Sydney), Canada (Central), China (Ningxia) Region

Parameters:

None

AWS CloudFormation template

To create AWS Config managed rules with AWS CloudFormation templates, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.

List of AWS Config Managed Rules by Evaluation Mode

AWS Config currently supports the following managed rules. Before using these rules, see Considerations.

Proactive Evaluation

Proactive rules are rules that support the proactive evaluation mode for resources that have not been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region. For more information, see Evaluation modes.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

Proactive Evaluation

- api-gw-xray-enabled
- autoscaling-group-elb-healthcheck-required
- ec2-instance-multiple-eni-check
- eip-attached
- elasticsearch-node-to-node-encryption-check
- lambda-function-settings-check

- lambda-inside-vpc
- rds-automatic-minor-version-upgrade-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-public-access-check
- rds-multi-az-support
- rds-storage-encrypted
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- s3-bucket-logging-enabled
- sns-encrypted-kms
- subnet-auto-assign-public-ip-disabled

Detective Evaluation

Detective rules are rules that support the detective evaluation mode for resource that have already been deployed. This allows you to evaluate the configuration settings of your existing resources.

> **Note**
>
> Currently, all AWS Config rules support detective evaluation.

Detective Evaluation

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled

- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description

- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest
- appsync-cache-ct-encryption-in-transit
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description

- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template

- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudfront-accesslogs-enabled
- cloudfront-associated-with-waf
- cloudfront-custom-ssl-certificate
- cloudfront-default-root-object-configured
- cloudfront-no-deprecated-ssl-protocols
- cloudfront-origin-access-identity-enabled
- cloudfront-origin-failover-enabled
- cloudfront-s3-origin-access-control-enabled
- cloudfront-s3-origin-non-existent-bucket
- cloudfront-security-policy-check
- cloudfront-sni-enabled
- cloudfront-traffic-to-origin-encrypted
- cloudfront-viewer-policy-https
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check

- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached

- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled

- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled

- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check

- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached

- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled

- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target

- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-oidc-provider-tagged
- iam-password-policy
- iam-policy-blacklisted-check

- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-saml-provider-tagged
- iam-server-certificate-expiration-check
- iam-server-certificate-tagged
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged

- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode

- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled

- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check

- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check

- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- route53-query-logging-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only

- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk

- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- ses-malware-scanning-enabled
- shield-advanced-enabled-autorenew
- shield-drt-access
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault

- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-classic-logging-enabled
- waf-global-rulegroup-not-empty
- waf-global-rule-not-empty
- waf-global-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

List of AWS Config Managed Rules by Trigger Type

AWS Config currently supports the following managed rules. Before using these rules, see Considerations.

Configuration Changes

Change-triggered rules are rules that AWS Config evaluates in response to configuration changes.

Configuration Changes

- acmpca-certificate-authority-tagged
- acm-certificate-rsa-check
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged

- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest

- appsync-cache-ct-encryption-in-transit
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-backtracking-enabled
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged

- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-notification-check
- cloudfront-accesslogs-enabled
- cloudfront-associated-with-waf
- cloudfront-custom-ssl-certificate
- cloudfront-default-root-object-configured
- cloudfront-no-deprecated-ssl-protocols
- cloudfront-origin-access-identity-enabled
- cloudfront-origin-failover-enabled
- cloudfront-s3-origin-access-control-enabled
- cloudfront-security-policy-check
- cloudfront-sni-enabled
- cloudfront-traffic-to-origin-encrypted
- cloudfront-viewer-policy-https
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-settings-check
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update

- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled

- docdb-cluster-encrypted
- docdb-cluster-snapshot-public-prohibited
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- ebs-optimized-instance
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-dhcp-options-tagged
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged

- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host

- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-filesystem-ct-encrypted
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-supported-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes

- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- iam-customer-policy-blocked-kms-actions
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-oidc-provider-tagged
- iam-policy-blacklisted-check
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-saml-provider-tagged

- iam-server-certificate-tagged
- iam-user-group-membership-check
- iam-user-no-policies-check
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-key-policy-no-public-access
- lambda-concurrency-check

- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets

- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled

- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-logging-enabled
- rds-multi-az-support
- rds-postgresql-logs-to-cloudwatch
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- required-tags
- route53-query-logging-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited

- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-root-access-check
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-using-cmk
- service-catalog-shared-within-organization

- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-vpn-2-tunnels-up
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-global-rulegroup-not-empty
- waf-global-rule-not-empty
- waf-global-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled

- workspaces-user-volume-encryption-enabled

Periodic

Periodic rules are rules that AWS Config evaluates periodicially at a frequency that you specify; for example, every 24 hours.

Periodic

- access-keys-rotated
- account-part-of-organizations
- acm-pca-root-ca-disabled
- alb-http-to-https-redirection-check
- api-gwv2-authorization-type-configured
- appsync-associated-with-waf
- appsync-cache-encryption-at-rest
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- cloudfront-s3-origin-non-existent-bucket
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-resource-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled

- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- dms-replication-not-public
- docdb-cluster-encrypted-in-transit
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-resources-protected-by-backup-plan
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-client-vpn-not-authorize-all
- ec2-ebs-encryption-by-default
- ec2-last-backup-recovery-point-created
- ec2-meets-restore-time-target
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ecr-private-image-scanning-enabled

- efs-encrypted-check
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eks-cluster-logging-enabled
- eks-cluster-secrets-encrypted
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elbv2-acm-certificate-required
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- event-data-store-cmk-encryption-enabled
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target

- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- iam-policy-in-use
- iam-root-access-key-check
- iam-server-certificate-expiration-check
- iam-user-mfa-enabled
- iam-user-unused-credentials-check
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- kinesis-firehose-delivery-stream-encrypted
- kms-cmk-not-scheduled-for-deletion

- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-automatic-minor-version-upgrade-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-no-public-access
- multi-region-cloud-trail-enabled
- netfw-logging-enabled
- nlb-logging-enabled
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-mysql-instance-encrypted-in-transit
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-sqlserver-encrypted-in-transit
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled

- s3-account-level-public-access-blocks-periodic
- s3-last-backup-recovery-point-created
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- securityhub-enabled
- security-account-information-provided
- service-vpc-endpoint-enabled
- ses-malware-scanning-enabled
- shield-advanced-enabled-autorenew
- shield-drt-access
- ssm-document-not-public
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- transfer-family-server-no-ftp
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-sg-port-restriction-check
- wafv2-logging-enabled

- waf-classic-logging-enabled

Hybrid

Hybrid rules are rules that AWS Config evaluates both in response to configuration changes and periodicially.

Hybrid

- acm-certificate-expiration-check
- cloudformation-stack-drift-detection-check
- ec2-instance-launched-with-allowed-ami
- incoming-ssh-disabled
- restricted-incoming-traffic
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- vpc-sg-open-only-to-authorized-ports

List of AWS Config Managed Rules by Region Availability

AWS Config currently supports the following managed rules. Before using these rules, see Considerations.

US East (Ohio) Region

US East (Ohio)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check

- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged

- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest

- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled

- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled

- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging

- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default

- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check

- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled

- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only

- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check

- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled

- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged

- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access

- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance

- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit

- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags

- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan

- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public

- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty

- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

US East (N. Virginia) Region

US East (N. Virginia)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted

- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged

- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest
- appsync-cache-ct-encryption-in-transit
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing

- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudfront-accesslogs-enabled
- cloudfront-associated-with-waf
- cloudfront-custom-ssl-certificate
- cloudfront-default-root-object-configured
- cloudfront-no-deprecated-ssl-protocols

- cloudfront-origin-access-identity-enabled
- cloudfront-origin-failover-enabled
- cloudfront-s3-origin-access-control-enabled
- cloudfront-s3-origin-non-existent-bucket
- cloudfront-security-policy-check
- cloudfront-sni-enabled
- cloudfront-traffic-to-origin-encrypted
- cloudfront-viewer-policy-https
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check

- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled

- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged

- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check

- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration

- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit

- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description

- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled

- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-oidc-provider-tagged
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-saml-provider-tagged
- iam-server-certificate-expiration-check
- iam-server-certificate-tagged
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled

- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted

- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check

- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance

- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited

- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- route53-query-logging-enabled
- s3-access-point-in-vpc-only

- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged

- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- ses-malware-scanning-enabled
- shield-advanced-enabled-autorenew
- shield-drt-access
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged

- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty

- waf-classic-logging-enabled
- waf-global-rulegroup-not-empty
- waf-global-rule-not-empty
- waf-global-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

US West (N. California) Region

US West (N. California)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled

- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists

- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types

- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled

- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy

- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled

- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault

- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user

- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version

- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check

- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions

- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check

- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled

- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed

- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az

- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited

- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check

- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created

- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

US West (Oregon) Region

US West (Oregon)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled

- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description

- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description

- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged

- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled

- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled

- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled

- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault

- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host

- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check

- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description

- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled

- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only

- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check

- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled

- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable

- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled

- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled

- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled

- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- ses-malware-scanning-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged

- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Africa (Cape Town) Region

Africa (Cape Town)

- access-keys-rotated

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage

- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging

- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging

- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached

- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault

- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair

- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory

- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description

- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target

- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access

- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode

- mq-active-single-instance-broker-storage-type-efs
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled

- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled

- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only

- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured

- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan

- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled

- workspaces-user-volume-encryption-enabled

Asia Pacific (Hong Kong) Region

Asia Pacific (Hong Kong)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled

- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled

- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template

- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check

- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled

- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm

- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description

- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
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- efs-meets-restore-time-target

- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required

- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check

- glb-listener-tagged
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check

- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled

- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled

- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target

- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-no-public-access
- redshift-unrestricted-port-access
- required-tags

- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check

- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged

- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty

- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Asia Pacific (Hyderabad) Region

Asia Pacific (Hyderabad)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-extension-association-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled

- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted

- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-stopped-instance

- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted

- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check

- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- iam-root-access-key-check
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion

- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rds-aurora-mysql-audit-logging-enabled
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled

- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access

- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-notebook-instance-kms-key-configured

- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check

- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Asia Pacific (Jakarta) Region

Asia Pacific (Jakarta)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged

- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade

- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled

- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-report-group-encrypted-at-rest
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled

- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled

- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest

- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled

- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled

- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets

- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled

- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption

- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-no-public-access
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check

- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description

- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Asia Pacific (Malaysia) Region

Asia Pacific (Malaysia)

- account-part-of-organizations
- acm-certificate-expiration-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gw-associated-with-waf

- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- aurora-mysql-backtracking-enabled
- autoscaling-group-elb-healthcheck-required
- autoscaling-launch-config-public-ip-disabled
- cloudformation-stack-drift-detection-check
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- cw-loggroup-retention-period-check
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled

- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-volume-inuse-check
- ecs-task-definition-user-for-host-mode-check
- efs-encrypted-check
- efs-in-backup-plan
- eip-attached
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only

- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- guardduty-enabled-centralized
- guardduty-non-archived-findings
- iam-password-policy
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- multi-region-cloud-trail-enabled
- no-unrestricted-route-to-igw
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled

- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-multi-az-support
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-storage-encrypted
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- required-tags
- restricted-incoming-traffic
- s3-account-level-public-access-blocks-periodic
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled

- s3-default-encryption-kms
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- ssm-document-not-public
- subnet-auto-assign-public-ip-disabled
- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled

Asia Pacific (Melbourne) Region

Asia Pacific (Melbourne)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check

- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- approved-amis-by-id
- approved-amis-by-tag
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit

- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check

- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted

- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory

- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled

- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- iam-root-access-key-check
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion

- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-log-enabled
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rds-aurora-mysql-audit-logging-enabled

- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az

- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms

- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-config-prod-instance-count
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- subnet-auto-assign-public-ip-disabled
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-port-restriction-check

- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Asia Pacific (Mumbai) Region

Asia Pacific (Mumbai)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled

- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged

- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2

- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled

- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms

- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check

- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged

- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access

- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access

- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized

- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged

- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check

- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets

- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled

- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check

- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited

- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check

- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault

- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Asia Pacific (Osaka) Region

Asia Pacific (Osaka)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-internal-scheme-check

- alb-listener-tagged
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls

- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit

- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check

- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled

- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-tagged
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check

- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled

- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access

- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-cross-zone-load-balancing-enabled
- elb-logging-enabled
- emr-block-public-access
- emr-kerberos-enabled
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check

- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check

- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check

- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets

- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check

- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check

- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created

- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms

- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- wafv2-logging-enabled

- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Asia Pacific (Seoul) Region

Asia Pacific (Seoul)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf

- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged

- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appstream-fleet-in-vpc
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check

- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled

- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy

- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target

- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target

- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access

- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled

- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest

- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings

- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged

- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access

- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty

- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled

- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl

- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only

- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk

- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled

- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Asia Pacific (Singapore) Region

Asia Pacific (Singapore)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check

- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged

- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration

- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged

- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update

- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging

- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged

- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic

- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory

- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description

- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists

- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings

- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged

- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode

- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled

- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check

- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check

- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged

- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled

- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled

- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Asia Pacific (Sydney) Region

Asia Pacific (Sydney)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged

- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding

- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade

- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check

- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured

- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged

- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged

- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic

- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory

- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description

- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists

- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings

- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged

- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs

- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated

- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check

- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check

- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled

- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation

- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan

- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Asia Pacific (Thailand) Region

Asia Pacific (Thailand)

- account-part-of-organizations
- acm-certificate-expiration-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled

- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- aurora-mysql-backtracking-enabled
- autoscaling-group-elb-healthcheck-required
- autoscaling-launch-config-public-ip-disabled
- cloudformation-stack-drift-detection-check
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- cw-loggroup-retention-period-check
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check

- ebs-in-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-volume-inuse-check
- ecs-task-definition-user-for-host-mode-check
- efs-encrypted-check
- efs-in-backup-plan
- eip-attached
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elb-acm-certificate-required

- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- iam-password-policy
- incoming-ssh-disabled
- instances-in-vpc
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- multi-region-cloud-trail-enabled
- no-unrestricted-route-to-igw
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-in-backup-plan
- rds-logging-enabled

- rds-multi-az-support
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-storage-encrypted
- required-tags
- restricted-incoming-traffic
- s3-account-level-public-access-blocks-periodic
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- ssm-document-not-public
- subnet-auto-assign-public-ip-disabled

- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-vpn-2-tunnels-up

Asia Pacific (Tokyo) Region

Asia Pacific (Tokyo)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf

- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged

- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2

- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged

- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created

- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created

- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged

- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan

- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required

- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check

- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check

- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged

- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode

- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest

- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit

- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags

- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan

- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public

- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty

- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Canada (Central) Region

Canada (Central)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured

- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged

- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appstream-fleet-in-vpc
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types

- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled

- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled

- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created

- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check

- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access

- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled

- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest

- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings

- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged

- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled

- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled

- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support

- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access

- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault

- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access

- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled

- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Canada West (Calgary) Region

Canada West (Calgary)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- approved-amis-by-id
- approved-amis-by-tag
- athena-data-catalog-description
- athena-prepared-statement-description

- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- autoscaling-group-elb-healthcheck-required
- autoscaling-launch-config-public-ip-disabled
- batch-scheduling-policy-tagged
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- cognito-user-pool-tagged
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled

- dynamodb-throughput-limit-check
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-prefix-list-tagged
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-multicast-domain-tagged
- ecr-repository-tagged
- ecs-task-definition-user-for-host-mode-check
- efs-encrypted-check
- efs-in-backup-plan
- eip-attached
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled

- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-security-configuration-encryption-transit
- encrypted-volumes
- guardduty-enabled-centralized
- guardduty-non-archived-findings
- incoming-ssh-disabled
- instances-in-vpc
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- multi-region-cloud-trail-enabled
- nlb-internal-scheme-check
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-logging-enabled
- rds-multi-az-support
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-storage-encrypted

- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- required-tags
- restricted-incoming-traffic
- s3-account-level-public-access-blocks-periodic
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused

- secretsmanager-using-cmk
- securityhub-enabled
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- ssm-document-tagged
- subnet-auto-assign-public-ip-disabled
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled

China (Beijing) Region

China (Beijing)

- access-keys-rotated
- acm-certificate-expiration-check
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gwv2-access-logs-enabled

- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-logging-enabled
- athena-workgroup-encrypted-at-rest
- athena-workgroup-logging-enabled
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudfront-s3-origin-non-existent-bucket
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled

- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-logging-enabled
- dax-encryption-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-targetdb-logging
- docdb-cluster-encrypted-in-transit

- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-paravirtual-instance-check
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-volume-inuse-check

- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check

- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-ontap-deployment-type-check
- fsx-openzfs-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-enabled-centralized
- guardduty-non-archived-findings
- iam-customer-policy-blocked-kms-actions
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions

- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mfa-enabled-for-iam-console-access
- mq-active-deployment-mode
- mq-auto-minor-version-upgrade-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled

- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-update-check
- rabbit-mq-supported-version
- rds-automatic-minor-version-upgrade-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az

- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms

- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-connector-logging-enabled
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports

- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-webacl-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

China (Ningxia) Region

China (Ningxia)

- access-keys-rotated
- account-part-of-organizations
- acm-certificate-expiration-check
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-logging-enabled

- athena-workgroup-encrypted-at-rest
- athena-workgroup-logging-enabled
- aurora-mysql-backtracking-enabled
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled

- cmk-backing-key-rotation-enabled
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-logging-enabled
- dax-encryption-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check

- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-security-group-attached-to-eni
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-volume-inuse-check
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version

- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled

- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-ontap-deployment-type-check
- fsx-openzfs-deployment-type-check
- glue-job-logging-enabled
- glue-spark-job-supported-version
- guardduty-enabled-centralized
- guardduty-non-archived-findings
- iam-customer-policy-blocked-kms-actions
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check

- iam-user-unused-credentials-check
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- mfa-enabled-for-iam-console-access
- mq-active-deployment-mode
- mq-auto-minor-version-upgrade-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- no-unrestricted-route-to-igw
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled

- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled

- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check

- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-connector-logging-enabled
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled

- wafv2-webacl-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Europe (Frankfurt) Region

Europe (Frankfurt)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf

- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged

- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest
- appsync-cache-ct-encryption-in-transit
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan

- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited

- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged

- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited

- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check

- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description

- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target

- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required

- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target

- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use

- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged

- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled

- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw

- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit

- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access

- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check

- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled

- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up

- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Europe (Ireland) Region

Europe (Ireland)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled

- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists

- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appstream-fleet-in-vpc
- appstream-fleet-multi-az
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan

- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited

- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged

- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created

- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created

- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled

- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault

- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check

- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- frauddetector-entity-type-tagged
- frauddetector-label-tagged
- frauddetector-outcome-tagged
- frauddetector-variable-tagged
- fsx-last-backup-recovery-point-created

- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy

- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged
- iottwinmaker-component-type-tagged
- iottwinmaker-entity-tagged
- iottwinmaker-scene-tagged
- iottwinmaker-sync-job-tagged
- iottwinmaker-workspace-tagged

- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- ivs-channel-playback-authorization-enabled
- ivs-channel-tagged
- ivs-playback-key-pair-tagged
- ivs-recording-configuration-tagged
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled

- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged

- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan

- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption

- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms

- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization

- service-vpc-endpoint-enabled
- ses-malware-scanning-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check

- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Europe (London) Region

Europe (London)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled

- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appintegrations-event-integration-description
- appintegrations-event-integration-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged

- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- appstream-fleet-in-vpc
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled

- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check

- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check

- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- connect-instance-logging-enabled
- customerprofiles-object-type-allow-profile-creation
- customerprofiles-object-type-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled

- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled

- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description

- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan

- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch

- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan

- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check

- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotevents-alarm-model-tagged
- iotevents-detector-model-tagged
- iotevents-input-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check

- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets

- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled

- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check

- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited

- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check

- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault

- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Europe (Milan) Region

Europe (Milan)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check

- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged

- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required

- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled

- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance

- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair

- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check

- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description

- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created

- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check

- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication

- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest

- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch

- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited

- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc

- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged

- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Europe (Paris) Region

Europe (Paris)

- access-keys-rotated
- account-part-of-organizations

- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm

- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- apprunner-service-in-vpc
- apprunner-service-no-public-access
- apprunner-service-observability-enabled
- apprunner-service-tagged
- apprunner-vpc-connector-multi-az
- apprunner-vpc-connector-tagged
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled

- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged

- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted

- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging

- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-carrier-gateway-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all

- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic

- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory

- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description

- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups

- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use

- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check

- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets

- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled

- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check

- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited

- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check

- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault

- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Europe (Spain) Region

Europe (Spain)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled

- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-extension-association-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged

- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check

- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted

- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted

- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes

- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- incoming-ssh-disabled
- instances-in-vpc

- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rds-aurora-mysql-audit-logging-enabled
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check

- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check

- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-ssl-requests-only

- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled

- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Europe (Stockholm) Region

Europe (Stockholm)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check

- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged

- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing

- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled

- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codeguruprofiler-profiling-group-tagged
- codegururevieweer-repository-association-tagged
- codepipeline-deployment-count-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached

- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target

- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged

- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version

- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled

- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes

- event-data-store-cmk-encryption-enabled
- evidently-launch-description
- evidently-launch-tagged
- evidently-project-description
- evidently-project-tagged
- evidently-segment-description
- evidently-segment-tagged
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled

- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-code-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only

- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- lightsail-bucket-tagged
- lightsail-certificate-tagged
- lightsail-disk-tagged
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled

- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required

- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit

- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled

- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged

- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled

- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty

- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Europe (Zurich) Region

Europe (Zurich)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-extension-association-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled
- athena-data-catalog-description

- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-backtracking-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled

- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-spot-fleet-request-ct-encryption-at-rest
- ec2-stopped-instance
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged

- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted

- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups

- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted

- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest

- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled

- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-encrypted-in-transit
- redshift-serverless-workgroup-no-public-access
- redshift-serverless-workgroup-routes-within-vpc
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled

- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged

- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Israel (Tel Aviv) Region

Israel (Tel Aviv)

- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled
- api-gw-associated-with-waf

- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag

- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled

- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check

- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets

- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eip-attached
- eks-cluster-secrets-encrypted
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check

- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited

- lambda-function-settings-check
- lambda-inside-vpc
- macie-auto-sensitive-data-discovery-check
- mariadb-publish-logs-to-cloudwatch-logs
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rds-aurora-mysql-audit-logging-enabled
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled

- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption

- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-no-public-access
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-endpoint-configuration-kms-key-configured

- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- subnet-auto-assign-public-ip-disabled
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check

- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-webacl-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Mexico (Central) Region

Mexico (Central)

- account-part-of-organizations
- acm-certificate-expiration-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- approved-amis-by-id
- approved-amis-by-tag
- aurora-mysql-backtracking-enabled
- autoscaling-group-elb-healthcheck-required
- autoscaling-launch-config-public-ip-disabled
- cloudformation-stack-drift-detection-check
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled

- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- cw-loggroup-retention-period-check
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-security-group-attached-to-eni

- ec2-stopped-instance
- ec2-volume-inuse-check
- ecs-task-definition-user-for-host-mode-check
- efs-encrypted-check
- efs-in-backup-plan
- eip-attached
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- iam-password-policy
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check

- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- multi-region-cloud-trail-enabled
- no-unrestricted-route-to-igw
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-multi-az-support
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-storage-encrypted
- required-tags
- restricted-incoming-traffic
- s3-account-level-public-access-blocks-periodic
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited

- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- secretsmanager-using-cmk
- securityhub-enabled
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- ssm-document-not-public
- subnet-auto-assign-public-ip-disabled
- vpc-default-security-group-closed
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-vpn-2-tunnels-up

Middle East (Bahrain) Region

Middle East (Bahrain)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check

- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged

- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf
- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest
- appsync-cache-ct-encryption-in-transit
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2

- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check

- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy

- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged

- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-prefix-list-tagged
- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni

- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity

- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check
- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest

- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-openzfs-copy-tags-enabled
- fsx-resources-protected-by-backup-plan

- fsx-windows-audit-log-configured
- glb-listener-tagged
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled

- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled

- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only

- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted

- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled

- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-root-access-check

- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created

- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

Middle East (UAE) Region

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- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-waf-enabled

- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-extension-association-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-authorization-check
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-mysql-cluster-audit-logging
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- batch-compute-environment-enabled
- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled

- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- clb-multiple-az
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled

- datasync-task-tagged
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-replication-not-public
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-pitr-enabled
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-optimized-instance
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip

- ec2-instance-profile-attached
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-prefix-list-tagged
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-pid-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled

- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-mount-target-public-accessible
- eks-cluster-log-enabled
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elbv2-multiple-az
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check

- fms-webacl-rulegroup-association-check
- fsx-lustre-copy-tags-to-backups
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-external-access-analyzer-enabled
- iam-password-policy
- incoming-ssh-disabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted

- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- mariadb-publish-logs-to-cloudwatch-logs
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted
- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled

- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-internal-scheme-check
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-default-admin-check
- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit

- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-no-public-access
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic

- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-lifecycle-policy-check
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check

- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged
- transfer-workflow-description
- transfer-workflow-tagged
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up

- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty

South America (São Paulo) Region

South America (São Paulo)

- access-keys-rotated
- account-part-of-organizations
- acmpca-certificate-authority-tagged
- acm-certificate-expiration-check
- acm-certificate-rsa-check
- acm-pca-root-ca-disabled
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-internal-scheme-check
- alb-listener-tagged
- alb-waf-enabled
- amplify-app-branch-auto-deletion-enabled
- amplify-app-description
- amplify-app-tagged
- amplify-branch-performance-mode-enabled
- amplify-branch-tagged
- api-gwv2-access-logs-enabled
- api-gwv2-authorization-type-configured
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check

- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- appconfig-application-description
- appconfig-application-tagged
- appconfig-configuration-profile-tagged
- appconfig-configuration-profile-validators-not-empty
- appconfig-deployment-strategy-description
- appconfig-deployment-strategy-replicate-to-ssm
- appconfig-environment-description
- appconfig-environment-tagged
- appconfig-extension-association-tagged
- appconfig-freeform-profile-config-storage
- appconfig-hosted-configuration-version-description
- appflow-flow-tagged
- appmesh-gateway-route-tagged
- appmesh-mesh-deny-tcp-forwarding
- appmesh-mesh-tagged
- appmesh-route-tagged
- appmesh-virtual-gateway-backend-defaults-tls
- appmesh-virtual-gateway-logging-file-path-exists
- appmesh-virtual-gateway-tagged
- appmesh-virtual-node-backend-defaults-tls-on
- appmesh-virtual-node-logging-file-path-exists
- appmesh-virtual-node-tagged
- appmesh-virtual-router-tagged
- appmesh-virtual-service-tagged
- approved-amis-by-id
- approved-amis-by-tag
- appsync-associated-with-waf

- appsync-authorization-check
- appsync-cache-ct-encryption-at-rest
- appsync-cache-ct-encryption-in-transit
- appsync-cache-encryption-at-rest
- appsync-logging-enabled
- athena-data-catalog-description
- athena-prepared-statement-description
- athena-workgroup-description
- athena-workgroup-encrypted-at-rest
- athena-workgroup-enforce-workgroup-configuration
- athena-workgroup-engine-version-auto-upgrade
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-meets-restore-time-target
- aurora-mysql-cluster-audit-logging
- aurora-resources-in-logically-air-gapped-vault
- aurora-resources-protected-by-backup-plan
- autoscaling-capacity-rebalancing
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-hop-limit
- autoscaling-launch-config-public-ip-disabled
- autoscaling-launch-template
- autoscaling-multiple-az
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- batch-compute-environment-enabled

- batch-compute-environment-managed
- batch-compute-environment-tagged
- batch-job-queue-enabled
- batch-job-queue-tagged
- batch-managed-compute-environment-using-launch-template
- batch-managed-compute-env-compute-resources-tagged
- batch-scheduling-policy-tagged
- beanstalk-enhanced-health-reporting-enabled
- cassandra-keyspace-tagged
- clb-desync-mode-check
- clb-multiple-az
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-action-enabled-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-artifact-encryption

- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- codedeploy-auto-rollback-monitor-enabled
- codedeploy-deployment-group-auto-rollback-enabled
- codedeploy-deployment-group-outdated-instances-update
- codedeploy-ec2-minimum-healthy-hosts-configured
- codedeploy-lambda-allatonce-traffic-shift-disabled
- codepipeline-deployment-count-check
- codepipeline-region-fanout-check
- cognito-user-pool-advanced-security-enabled
- cognito-user-pool-tagged
- custom-eventbus-policy-attached
- custom-schema-registry-policy-attached
- cw-loggroup-retention-period-check
- datasync-task-data-verification-enabled
- datasync-task-logging-enabled
- datasync-task-tagged
- dax-encryption-enabled
- dax-tls-endpoint-encryption
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-auto-minor-version-upgrade-check
- dms-endpoint-ssl-configured
- dms-endpoint-tagged
- dms-mongo-db-authentication-enabled

- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- dms-replication-task-sourcedb-logging
- dms-replication-task-tagged
- dms-replication-task-targetdb-logging
- docdb-cluster-audit-logging-enabled
- docdb-cluster-backup-retention-check
- docdb-cluster-deletion-protection-enabled
- docdb-cluster-encrypted
- docdb-cluster-encrypted-in-transit
- docdb-cluster-snapshot-public-prohibited
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-meets-restore-time-target
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-meets-restore-time-target
- ebs-optimized-instance
- ebs-resources-in-logically-air-gapped-vault
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-capacity-reservation-tagged

- ec2-client-vpn-connection-log-enabled
- ec2-client-vpn-endpoint-tagged
- ec2-client-vpn-not-authorize-all
- ec2-dhcp-options-tagged
- ec2-ebs-encryption-by-default
- ec2-fleet-tagged
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-launch-template-imdsv2-check
- ec2-launch-template-public-ip-disabled
- ec2-launch-template-tagged
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-meets-restore-time-target
- ec2-network-insights-access-scope-analysis-tagged
- ec2-network-insights-access-scope-tagged
- ec2-network-insights-path-tagged
- ec2-no-amazon-key-pair
- ec2-paravirtual-instance-check
- ec2-prefix-list-tagged

- ec2-resources-in-logically-air-gapped-vault
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-security-group-attached-to-eni-periodic
- ec2-stopped-instance
- ec2-token-hop-limit-check
- ec2-traffic-mirror-filter-description
- ec2-traffic-mirror-filter-tagged
- ec2-traffic-mirror-session-description
- ec2-traffic-mirror-session-tagged
- ec2-traffic-mirror-target-description
- ec2-traffic-mirror-target-tagged
- ec2-transit-gateway-auto-vpc-attach-disabled
- ec2-transit-gateway-multicast-domain-tagged
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecr-repository-tagged
- ecs-awsvpc-networking-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-no-environment-secrets
- ecs-task-definition-log-configuration
- ecs-task-definition-memory-hard-limit
- ecs-task-definition-network-mode-not-host

- ecs-task-definition-nonroot-user
- ecs-task-definition-pid-mode-check
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-root-directory
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-meets-restore-time-target
- efs-mount-target-public-accessible
- efs-resources-in-logically-air-gapped-vault
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-logging-enabled
- eks-cluster-log-enabled
- eks-cluster-oldest-supported-version
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-auto-minor-version-upgrade-check
- elasticache-rbac-auth-enabled
- elasticache-redis-cluster-automatic-backup-check
- elasticache-repl-grp-auto-failover-enabled
- elasticache-repl-grp-encrypted-at-rest
- elasticache-repl-grp-encrypted-in-transit
- elasticache-repl-grp-redis-auth-enabled
- elasticache-subnet-group-check

- elasticache-supported-engine-version
- elasticbeanstalk-application-description
- elasticbeanstalk-application-version-description
- elasticbeanstalk-environment-description
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-logs-to-cloudwatch
- elastic-beanstalk-managed-updates-enabled
- elbv2-acm-certificate-required
- elbv2-multiple-az
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-block-public-access
- emr-kerberos-enabled
- emr-master-no-public-ip
- emr-security-configuration-encryption-rest
- emr-security-configuration-encryption-transit
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fis-experiment-template-log-configuration-exists
- fis-experiment-template-tagged
- fms-shield-resource-policy-check

- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-lustre-copy-tags-to-backups
- fsx-meets-restore-time-target
- fsx-ontap-deployment-type-check
- fsx-openzfs-copy-tags-enabled
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-audit-log-configured
- fsx-windows-deployment-type-check
- glb-listener-tagged
- global-endpoint-event-replication-enabled
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-ec2-protection-runtime-enabled
- guardduty-ecs-protection-runtime-enabled
- guardduty-eks-protection-audit-enabled
- guardduty-eks-protection-runtime-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-malware-protection-enabled
- guardduty-non-archived-findings
- guardduty-rds-protection-enabled
- guardduty-runtime-monitoring-enabled
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-external-access-analyzer-enabled
- iam-group-has-users-check

- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- iotwireless-fuota-task-tagged
- iotwireless-multicast-group-tagged
- iotwireless-service-profile-tagged
- iot-authorizer-token-signing-enabled
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- kms-key-policy-no-public-access
- lambda-concurrency-check
- lambda-dlq-check

- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- lambda-vpc-multi-az-check
- macie-auto-sensitive-data-discovery-check
- macie-status-check
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-active-broker-ldap-authentication
- mq-active-deployment-mode
- mq-active-single-instance-broker-storage-type-efs
- mq-automatic-minor-version-upgrade-enabled
- mq-auto-minor-version-upgrade-enabled
- mq-broker-general-logging-enabled
- mq-cloudwatch-audit-logging-enabled
- mq-cloudwatch-audit-log-enabled
- mq-no-public-access
- mq-rabbit-deployment-mode
- msk-enhanced-monitoring-enabled
- msk-in-cluster-node-require-tls
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- neptune-cluster-backup-retention-check
- neptune-cluster-cloudwatch-log-export-enabled
- neptune-cluster-copy-tags-to-snapshot-enabled
- neptune-cluster-deletion-protection-enabled
- neptune-cluster-encrypted
- neptune-cluster-iam-database-authentication
- neptune-cluster-multi-az-enabled
- neptune-cluster-snapshot-encrypted

- neptune-cluster-snapshot-public-prohibited
- netfw-deletion-protection-enabled
- netfw-logging-enabled
- netfw-multi-az-enabled
- netfw-policy-default-action-fragment-packets
- netfw-policy-default-action-full-packets
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-cross-zone-load-balancing-enabled
- nlb-internal-scheme-check
- nlb-listener-tagged
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-access-control-enabled
- opensearch-audit-logging-enabled
- opensearch-data-node-fault-tolerance
- opensearch-encrypted-at-rest
- opensearch-https-required
- opensearch-in-vpc-only
- opensearch-logs-to-cloudwatch
- opensearch-node-to-node-encryption-check
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-mysql-audit-logging-enabled
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-auto-minor-version-upgrade-enable
- rds-cluster-default-admin-check

- rds-cluster-deletion-protection-enabled
- rds-cluster-encrypted-at-rest
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-db-security-group-not-allowed
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-meets-restore-time-target
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-proxy-tls-encryption
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-audit-logging-enabled
- redshift-backup-enabled
- redshift-cluster-configuration-check

- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-parameter-group-tagged
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-default-db-name-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-serverless-publish-logs-to-cloudwatch
- redshift-serverless-workgroup-no-public-access
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- root-account-hardware-mfa-enabled
- root-account-mfa-enabled
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled

- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-tagged
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-meets-restore-time-target
- s3-resources-in-logically-air-gapped-vault
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-app-image-config-tagged
- sagemaker-domain-in-vpc
- sagemaker-domain-tagged
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-feature-group-tagged
- sagemaker-image-description
- sagemaker-image-tagged
- sagemaker-model-in-vpc
- sagemaker-model-isolation-enabled
- sagemaker-notebook-instance-inside-vpc
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version

- sagemaker-notebook-instance-root-access-check
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- security-account-information-provided
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- sns-topic-message-delivery-notification-enabled
- sns-topic-no-public-access
- sqs-queue-no-public-access
- ssm-document-not-public
- ssm-document-tagged
- step-functions-state-machine-logging-enabled
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-in-logically-air-gapped-vault
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-agreement-description
- transfer-agreement-tagged
- transfer-certificate-description
- transfer-certificate-tagged
- transfer-connector-logging-enabled
- transfer-connector-tagged
- transfer-family-server-no-ftp
- transfer-profile-tagged

- transfer-workflow-description
- transfer-workflow-tagged
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-in-logically-air-gapped-vault
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-peering-dns-resolution-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- wafv2-rulegroup-logging-enabled
- wafv2-rulegroup-not-empty
- wafv2-webacl-not-empty
- waf-regional-rulegroup-not-empty
- waf-regional-rule-not-empty
- waf-regional-webacl-not-empty
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

AWS GovCloud (US-East) Region

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- access-keys-rotated
- account-part-of-organizations
- acm-certificate-expiration-check
- active-mq-supported-version
- alb-desync-mode-check

- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted
- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-mysql-cluster-audit-logging
- aurora-resources-protected-by-backup-plan
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-public-ip-disabled
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging

- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check
- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- cw-loggroup-retention-period-check
- datasync-task-logging-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- docdb-cluster-encrypted-in-transit
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan

- dynamodb-last-backup-recovery-point-created
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled
- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-optimized-instance
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-client-vpn-connection-log-enabled
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni

- ec2-stopped-instance
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled
- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-mount-target-public-accessible
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch

- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-managed-updates-enabled
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required
- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-ontap-deployment-type-check
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-spark-job-supported-version
- guardduty-eks-protection-audit-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-non-archived-findings
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions

- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check
- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- mariadb-publish-logs-to-cloudwatch-logs

- mfa-enabled-for-iam-console-access
- mq-cloudwatch-audit-log-enabled
- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch

- rds-postgres-instance-encrypted-in-transit
- rds-resources-protected-by-backup-plan
- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled

- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled
- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled

- sns-encrypted-kms
- ssm-document-not-public
- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-connector-logging-enabled
- transfer-family-server-no-ftp
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled

AWS GovCloud (US-West) Region

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- access-keys-rotated
- account-part-of-organizations
- acm-certificate-expiration-check
- active-mq-supported-version
- alb-desync-mode-check
- alb-http-drop-invalid-header-enabled
- alb-http-to-https-redirection-check
- alb-waf-enabled
- api-gw-associated-with-waf
- api-gw-cache-enabled-and-encrypted

- api-gw-endpoint-type-check
- api-gw-execution-logging-enabled
- api-gw-ssl-enabled
- api-gw-xray-enabled
- approved-amis-by-id
- approved-amis-by-tag
- athena-workgroup-logging-enabled
- aurora-last-backup-recovery-point-created
- aurora-mysql-cluster-audit-logging
- aurora-resources-protected-by-backup-plan
- autoscaling-group-elb-healthcheck-required
- autoscaling-launchconfig-requires-imdsv2
- autoscaling-launch-config-public-ip-disabled
- autoscaling-multiple-instance-types
- backup-plan-min-frequency-and-min-retention-check
- backup-recovery-point-encrypted
- backup-recovery-point-manual-deletion-disabled
- backup-recovery-point-minimum-retention-check
- beanstalk-enhanced-health-reporting-enabled
- clb-desync-mode-check
- cloudformation-stack-drift-detection-check
- cloudformation-stack-notification-check
- cloudtrail-all-read-s3-data-event-check
- cloudtrail-all-write-s3-data-event-check
- cloudtrail-s3-bucket-access-logging
- cloudtrail-s3-bucket-public-access-prohibited
- cloudtrail-s3-dataevents-enabled
- cloudtrail-security-trail-enabled
- cloudwatch-alarm-action-check
- cloudwatch-alarm-resource-check

- cloudwatch-alarm-settings-check
- cloudwatch-log-group-encrypted
- cloud-trail-cloud-watch-logs-enabled
- cloud-trail-enabled
- cloud-trail-encryption-enabled
- cloud-trail-log-file-validation-enabled
- cmk-backing-key-rotation-enabled
- codebuild-project-environment-privileged-check
- codebuild-project-envvar-awscred-check
- codebuild-project-logging-enabled
- codebuild-project-s3-logs-encrypted
- codebuild-project-source-repo-url-check
- codebuild-report-group-encrypted-at-rest
- connect-instance-logging-enabled
- cw-loggroup-retention-period-check
- datasync-task-logging-enabled
- db-instance-backup-enabled
- desired-instance-tenancy
- desired-instance-type
- dms-mongo-db-authentication-enabled
- dms-neptune-iam-authorization-enabled
- dms-redis-tls-enabled
- dms-replication-not-public
- docdb-cluster-encrypted-in-transit
- dynamodb-autoscaling-enabled
- dynamodb-in-backup-plan
- dynamodb-last-backup-recovery-point-created
- dynamodb-pitr-enabled
- dynamodb-resources-protected-by-backup-plan
- dynamodb-table-deletion-protection-enabled

- dynamodb-table-encrypted-kms
- dynamodb-table-encryption-enabled
- dynamodb-throughput-limit-check
- ebs-in-backup-plan
- ebs-last-backup-recovery-point-created
- ebs-optimized-instance
- ebs-resources-protected-by-backup-plan
- ebs-snapshot-public-restorable-check
- ec2-client-vpn-connection-log-enabled
- ec2-ebs-encryption-by-default
- ec2-imdsv2-check
- ec2-instance-detailed-monitoring-enabled
- ec2-instance-launched-with-allowed-ami
- ec2-instance-managed-by-ssm
- ec2-instance-multiple-eni-check
- ec2-instance-no-public-ip
- ec2-instance-profile-attached
- ec2-last-backup-recovery-point-created
- ec2-managedinstance-applications-blacklisted
- ec2-managedinstance-applications-required
- ec2-managedinstance-association-compliance-status-check
- ec2-managedinstance-inventory-blacklisted
- ec2-managedinstance-patch-compliance-status-check
- ec2-managedinstance-platform-check
- ec2-resources-protected-by-backup-plan
- ec2-security-group-attached-to-eni
- ec2-stopped-instance
- ec2-volume-inuse-check
- ec2-vpn-connection-logging-enabled
- ecr-private-image-scanning-enabled

- ecr-private-lifecycle-policy-configured
- ecr-private-tag-immutability-enabled
- ecr-repository-cmk-encryption-enabled
- ecs-containers-nonprivileged
- ecs-containers-readonly-access
- ecs-container-insights-enabled
- ecs-fargate-latest-platform-version
- ecs-task-definition-network-mode-not-host
- ecs-task-definition-user-for-host-mode-check
- efs-access-point-enforce-user-identity
- efs-automatic-backups-enabled
- efs-encrypted-check
- efs-filesystem-ct-encrypted
- efs-in-backup-plan
- efs-last-backup-recovery-point-created
- efs-mount-target-public-accessible
- efs-resources-protected-by-backup-plan
- eip-attached
- eks-cluster-secrets-encrypted
- eks-cluster-supported-version
- eks-endpoint-no-public-access
- eks-secrets-encrypted
- elasticache-redis-cluster-automatic-backup-check
- elasticsearch-encrypted-at-rest
- elasticsearch-in-vpc-only
- elasticsearch-logs-to-cloudwatch
- elasticsearch-node-to-node-encryption-check
- elastic-beanstalk-managed-updates-enabled
- elbv2-predefined-security-policy-ssl-check
- elb-acm-certificate-required

- elb-cross-zone-load-balancing-enabled
- elb-custom-security-policy-ssl-check
- elb-deletion-protection-enabled
- elb-logging-enabled
- elb-predefined-security-policy-ssl-check
- elb-tls-https-listeners-only
- emr-kerberos-enabled
- emr-master-no-public-ip
- encrypted-volumes
- event-data-store-cmk-encryption-enabled
- fms-shield-resource-policy-check
- fms-webacl-resource-policy-check
- fms-webacl-rulegroup-association-check
- fsx-last-backup-recovery-point-created
- fsx-ontap-deployment-type-check
- fsx-openzfs-deployment-type-check
- fsx-resources-protected-by-backup-plan
- fsx-windows-deployment-type-check
- glue-job-logging-enabled
- glue-ml-transform-encrypted-at-rest
- glue-spark-job-supported-version
- guardduty-eks-protection-audit-enabled
- guardduty-enabled-centralized
- guardduty-lambda-protection-enabled
- guardduty-non-archived-findings
- guardduty-s3-protection-enabled
- iam-customer-policy-blocked-kms-actions
- iam-group-has-users-check
- iam-inline-policy-blocked-kms-actions
- iam-no-inline-policy-check

- iam-password-policy
- iam-policy-blacklisted-check
- iam-policy-in-use
- iam-policy-no-statements-with-admin-access
- iam-policy-no-statements-with-full-access
- iam-role-managed-policy-check
- iam-root-access-key-check
- iam-server-certificate-expiration-check
- iam-user-group-membership-check
- iam-user-mfa-enabled
- iam-user-no-policies-check
- iam-user-unused-credentials-check
- incoming-ssh-disabled
- inspector-ec2-scan-enabled
- inspector-ecr-scan-enabled
- inspector-lambda-standard-scan-enabled
- instances-in-vpc
- internet-gateway-authorized-vpc-only
- kinesis-firehose-delivery-stream-encrypted
- kinesis-stream-backup-retention-check
- kinesis-stream-encrypted
- kms-cmk-not-scheduled-for-deletion
- lambda-concurrency-check
- lambda-dlq-check
- lambda-function-public-access-prohibited
- lambda-function-settings-check
- lambda-inside-vpc
- mariadb-publish-logs-to-cloudwatch-logs
- mfa-enabled-for-iam-console-access
- mq-cloudwatch-audit-log-enabled

- multi-region-cloud-trail-enabled
- nacl-no-unrestricted-ssh-rdp
- netfw-policy-rule-group-associated
- netfw-stateless-rule-group-not-empty
- netfw-subnet-change-protection-enabled
- nlb-logging-enabled
- no-unrestricted-route-to-igw
- opensearch-primary-node-fault-tolerance
- opensearch-update-check
- rabbit-mq-supported-version
- rds-aurora-postgresql-logs-to-cloudwatch
- rds-automatic-minor-version-upgrade-enabled
- rds-cluster-deletion-protection-enabled
- rds-cluster-iam-authentication-enabled
- rds-cluster-multi-az-enabled
- rds-enhanced-monitoring-enabled
- rds-instance-default-admin-check
- rds-instance-deletion-protection-enabled
- rds-instance-iam-authentication-enabled
- rds-instance-public-access-check
- rds-instance-subnet-igw-check
- rds-in-backup-plan
- rds-last-backup-recovery-point-created
- rds-logging-enabled
- rds-mariadb-instance-encrypted-in-transit
- rds-multi-az-support
- rds-mysql-instance-encrypted-in-transit
- rds-postgresql-logs-to-cloudwatch
- rds-postgres-instance-encrypted-in-transit
- rds-resources-protected-by-backup-plan

- rds-snapshots-public-prohibited
- rds-snapshot-encrypted
- rds-sqlserver-encrypted-in-transit
- rds-sql-server-logs-to-cloudwatch
- rds-storage-encrypted
- redshift-backup-enabled
- redshift-cluster-configuration-check
- redshift-cluster-kms-enabled
- redshift-cluster-maintenancesettings-check
- redshift-cluster-public-access-check
- redshift-cluster-subnet-group-multi-az
- redshift-default-admin-check
- redshift-enhanced-vpc-routing-enabled
- redshift-require-tls-ssl
- redshift-serverless-default-admin-check
- redshift-serverless-default-db-name-check
- redshift-serverless-namespace-cmk-encryption
- redshift-unrestricted-port-access
- required-tags
- restricted-incoming-traffic
- s3-access-point-in-vpc-only
- s3-access-point-public-access-blocks
- s3-account-level-public-access-blocks
- s3-account-level-public-access-blocks-periodic
- s3-bucket-acl-prohibited
- s3-bucket-blacklisted-actions-prohibited
- s3-bucket-cross-region-replication-enabled
- s3-bucket-default-lock-enabled
- s3-bucket-level-public-access-prohibited
- s3-bucket-logging-enabled

- s3-bucket-mfa-delete-enabled
- s3-bucket-policy-grantee-check
- s3-bucket-policy-not-more-permissive
- s3-bucket-public-read-prohibited
- s3-bucket-public-write-prohibited
- s3-bucket-replication-enabled
- s3-bucket-server-side-encryption-enabled
- s3-bucket-ssl-requests-only
- s3-bucket-versioning-enabled
- s3-default-encryption-kms
- s3-event-notifications-enabled
- s3-last-backup-recovery-point-created
- s3-lifecycle-policy-check
- s3-resources-protected-by-backup-plan
- s3-version-lifecycle-policy-check
- sagemaker-endpoint-configuration-kms-key-configured
- sagemaker-endpoint-config-prod-instance-count
- sagemaker-notebook-instance-kms-key-configured
- sagemaker-notebook-instance-platform-version
- sagemaker-notebook-no-direct-internet-access
- secretsmanager-rotation-enabled-check
- secretsmanager-scheduled-rotation-success-check
- secretsmanager-secret-periodic-rotation
- secretsmanager-secret-unused
- secretsmanager-using-cmk
- securityhub-enabled
- service-catalog-shared-within-organization
- service-vpc-endpoint-enabled
- sns-encrypted-kms
- ssm-document-not-public

- storagegateway-last-backup-recovery-point-created
- storagegateway-resources-protected-by-backup-plan
- subnet-auto-assign-public-ip-disabled
- transfer-connector-logging-enabled
- transfer-family-server-no-ftp
- virtualmachine-last-backup-recovery-point-created
- virtualmachine-resources-protected-by-backup-plan
- vpc-default-security-group-closed
- vpc-endpoint-enabled
- vpc-flow-logs-enabled
- vpc-network-acl-unused-check
- vpc-sg-open-only-to-authorized-ports
- vpc-sg-port-restriction-check
- vpc-vpn-2-tunnels-up
- wafv2-logging-enabled
- workspaces-root-volume-encryption-enabled
- workspaces-user-volume-encryption-enabled

Creating AWS Config Managed Rules With AWS CloudFormation Templates

> **Important**
>
> You must first create and start the AWS Config configuration recorder in order to create AWS Config managed rules with AWS CloudFormation. For more information, see Managing the Configuration Recorder.

For supported AWS Config managed rules, you can use the AWS CloudFormation templates to create the rule for your account or update an existing AWS CloudFormation stack. A stack is a collection of related resources that you provision and update as a single unit. When you launch a stack with a template, the AWS Config managed rule is created for you. The templates create only the rule, and don't create additional AWS resources.

> **Note**
>
> When AWS Config managed rules are updated, the templates are updated for the latest changes. To save a specific version of a template for a rule, download the template, and upload it to your S3 bucket.

For more information about working with AWS CloudFormation templates, see Getting Started with AWS CloudFormation in the *AWS CloudFormation User Guide*.

To launch an AWS CloudFormation stack for an AWS Config managed rule

1. Go to the CloudFormation console and create a new stack.
2. For **Specify template**:
   - If you downloaded the template, choose **Upload a template file**, and then **Choose file** to upload the template.
   - You can also choose **Amazon S3 URL**, and enter the template URL `http://s3.amazonaws.com/aws-configservice-us-east-1/cloudformation-templates-for-managed-rules/`*`THE_RULE_IDENTIFIER`*`.template`.

   > **Note**
   >
   > The rule identifier should be written in ALL_CAPS_WITH_UNDERSCORES. For example, CLOUDWATCH_LOG_GROUP_ENCRYPTED instead of cloudwatch-log-group-encrypted. For some rules, the rule identifier is different from the rule name. Make sure to use the rule identifier. For example, the rule identifier for restricted-ssh is INCOMING_SSH_DISABLED.

3. Choose **Next**.
4. For **Specify stack details**, type a stack name and enter parameter values for the AWS Config rule. For example, if you are using the `DESIRED_INSTANCE_TYPE` managed rule template, you can specify the instance type such as "m4.large".
5. Choose **Next**.
6. For **Options**, you can create tags or configure other advanced options. These are not required.
7. Choose **Next**.

8. For **Review**, verify that the template, parameters, and other options are correct.
9. Choose **Create**. The stack is created in a few minutes. You can view the created rule in the AWS Config console.

You can use the templates to create a single stack for AWS Config managed rules or update an existing stack in your account. If you delete a stack, the managed rules created from that stack are also deleted. For more information, see Working with Stacks in the *AWS CloudFormation User Guide*.

AWS Config Custom Rules

AWS Config Custom Rules are rules that you create from scratch. There are two ways to create AWS Config custom rules: with Lambda functions (AWS Lambda Developer Guide) and with Guard (Guard GitHub Repository), a policy-as-code language.

AWS Config custom rules created with Lambda are called *AWS Config Custom Lambda Rules* and AWS Config custom rules created with Guard are called *AWS Config Custom Policy Rules*.

Before using custom rules, see Considerations.

AWS Config Custom Policy Rules

Rules written using Guard can be created from the AWS Config console or by using the AWS Config rule APIs. AWS Config Custom Policy rules allow you to create AWS Config Custom rules without needing to use Java or Python to develop Lambda functions to manage your custom rules. AWS Config Custom Policy rules are initiated by configuration changes. For more information about Guard, see the Guard GitHub Repository.

AWS Config Custom Lambda Rules

Custom Lambda rules provide you with the option to use Java or Python to create a Lambda function for a AWS Config Custom rule. A *Lambda function* is custom code that you upload to AWS Lambda, and it is invoked by events that are published to it by an event source. If the Lambda function is associated with an AWS Config rule, AWS Config invokes it when the rule is initiated. The Lambda function then evaluates the configuration information that is sent by AWS Config, and it returns the evaluation results. For more information about Lambda functions, see Function and Event Sources in the *AWS Lambda Developer Guide*.

Format differences for AWS Config Custom Rules

The following table displays the format differences in the fields for the ConfigurationItem data type and for AWS Config Custom Rules.

ConfigurationItem	AWS Config Custom Rule
`version`	`configurationItemVersion`
`accountId`	`awsAccountId`
`arn`	`ARN`
`configurationItemMD5Hash`	`configurationStateMd5Hash`

Topics

- Creating AWS Config Custom Policy Rules
- Creating AWS Config Custom Lambda Rules
- Managing Deleted Resources for AWS Config Custom Lambda Rules

Creating AWS Config Custom Policy Rules

You can create AWS Config Custom Policy rules from the AWS Management Console, AWS CLI, or AWS Config API.

Adding AWS Config Custom Policy rules

Using the console

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the Region selector is set to an AWS Region that supports AWS Config rules. For the list of supported Regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**.
4. On the **Rules** page, choose **Add rule**.

5. On the **Specify rule type** page, choose **Create custom rule using Guard**.
6. On the **Configure rule** page, create your rule by completing the following steps:
   a. For **Rule name**, type a unique name for the rule.
   b. For **Description**, type a description for the rule.
   c. For **Guard runtime version**, choose the runtime system for your AWS Config Custom Policy rule.
   d. For **Rule Content**, you can populate it with the Guard Custom policy for your rule.
   e. For **Evaluation mode**, choose when in the resource creation and management process you want AWS Config to evaluate your resources. Depending on the rule, AWS Config can evaluate your resource configurations before a resource has been provisioned, after a resource has been provisoned, or both.
      i. Choose **Turn on proactive evaluation** to allow you to run evaluations on the configuration settings of your resources before they are deployed.

         After you have turned on proactive evaluation, you can use the StartResourceEvaluation API and GetResourceEvaluationSummary API to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region.

         For more information on using this commands, see Evaluating Your Resources with AWS Config Rules. For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.
      ii. Choose **Turn on detective evaluation** to evaluate the configuration settings of your existing resources.

         For detective evaluation, AWS Config Custom Policy rules are initiated by **Configuration changes**. This option will be pre-selected.

         - **Resources** – When a resource that matches the specified resource type, or the type plus identifier, is created, changed, or deleted.
         - **Tags** – When a resource with the specified tag is created, changed, or deleted.
         - **All changes** – When a resource recorded by AWS Config is created, changed, or deleted.

AWS Config runs the evaluation when it detects a change to a resource that matches the rule's scope. You can use the scope to constrain which resources initiate evaluations. Otherwise, evaluations are initiated when there is a change to a post-provisioned resource.

f. For **Parameters**, you can customize the values for the provided keys if your rule includes parameters. A parameter is an attribute that your resources must adhere to before they are considered compliant with the rule.

7. On the **Review and create** page, review all your selections before adding the rule to your AWS account.
8. When you finish reviewing your rules, choose **Add rule**.

Using the AWS CLI

Use the `put-config-rule` command.

The `Owner` field should be `CUSTOM_POLICY`. The following additional fields are required for AWS Config Custom Policy rules:

- `Runtime`: The runtime system for your AWS Config Custom Policy rules.
- `PolicyText`: The policy definition containing the logic for your AWS Config Custom Policy rules.
- `EnableDebugLogDelivery`: The Boolean expression for enabling debug logging for your AWS Config Custom Policy rule. The default value is `false`.

Using the API Reference

Use the PutConfigRule action.

The `Owner` field should be `CUSTOM_POLICY`. The following additional fields are required for AWS Config Custom Policy rules:

- `Runtime`: The runtime system for your AWS Config Custom Policy rules.
- `PolicyText`: The policy definition containing the logic for your AWS Config Custom Policy rules.

- `EnableDebugLogDelivery`: The Boolean expression for enabling debug logging for your AWS Config Custom Policy rule. The default value is `false`.

Writing rule content for AWS Config Custom Policy rules

With AWS Config Custom Policy rules, you can use AWS CloudFormation Guard's domain-specific language (DSL) to evaluate resource configurations. This topic provides patterns and best practices for writing custom policy rules.

For more information on how to write rules with Guard, see Writing Guard rules in the AWS CloudFormation Guard User Guide and AWS CloudFormation Guard 2.0's Modes of Operation in the Guard GitHub Repository.

Basic rule structure

Use the following basic format to create rules:

```
# Basic rule format
rule <rule_name> when
    resourceType == "<AWS::Service::Resource>" {
    # Evaluation clauses
}

# Example with filtering
let resources_of_type = Resources.*[ Type == 'AWS::Service::Resource' ]
rule check_resources when %resources_of_type !empty {
    %resources_of_type.configuration.property == expected_value
}
```

Key components

configuration

Contains the contents for the resource configuration.

supplementaryConfiguration

Contains additional contents for the resource configuration. AWS Config returns this field for certain resource types to supplement the information returned for the configuration field.

resourceType

AWS resource type being evaluated.

resourceId

The ID of the resource (for example, `sg-xxxxxx`).

accountId

The 12-digit AWS account ID associated with the resource.

Common patterns

Status checks

```
let allowed_status = ['ACTIVE', 'RUNNING']
rule check_resource_status when
    resourceType == "AWS::Service::Resource" {
    configuration.status IN %allowed_status
}
```

Required properties

```
rule check_required_properties when
    resourceType == "AWS::Service::Resource" {
    configuration.propertyName exists
    configuration.propertyName is_string  # or is_list, is_struct
}
```

Query blocks

```
configuration.Properties {
    property1 exists
    property2 is_string
    property3 IN [allowed_value1, allowed_value2]
}
```

Conditional evaluation

```
when configuration.feature_enabled == true {
    configuration.feature_settings exists
    configuration.feature_settings is_struct
```

```
}
```

Custom messages

```
rule check_compliance when
    resourceType == "AWS::Service::Resource" {
    configuration.property == expected_value <<Custom error message explaining the
 requirement>>
}}
```

Advanced features

Range checks

```
rule check_numeric_limits {
    # Inclusive range (lower_limit <= value <= upper_limit)
    configuration.value IN r[minimum_value, maximum_value]

    # Exclusive range (lower_limit < value < upper_limit)
    configuration.value IN r(exclusive_min, exclusive_max)

    # Left inclusive, right exclusive (lower_limit <= value < upper_limit)
    configuration.value IN r[minimum_value, exclusive_max)

    # Left exclusive, right inclusive (lower_limit < value <= upper_limit)
    configuration.value IN r(exclusive_min, maximum_value]
}
```

Combining conditions

```
# AND conditions (implicit through new lines)
condition_1
condition_2

# OR conditions (explicit)
condition_3 OR
condition_4
```

Chaining rules

```
rule check_prerequisites {
```

```
    configuration.required_setting exists
}

rule check_details when check_prerequisites {
    configuration.required_setting == expected_value
}
```

Best practices

- Use variables with `let` statements for improved readability.
- Group related checks using named rule blocks.
- Include descriptive comments.
- Use appropriate operators (`exists`, `is_string`, `is_list`).
- Use regex patterns with case-insensitive matching.

Example: dynamodb-pitr-enabled

The following example shows the policy definition for an AWS Config Custom Policy rule version of the AWS Config Managed rule dynamodb-pitr-enabled. This rule checks if DynamoDB tables have Point-in-Time Recovery enabled.

```
# Check if DynamoDB tables have Point-in-Time Recovery enabled
let status = ['ACTIVE']

rule tableisactive when
    resourceType == "AWS::DynamoDB::Table" {
    configuration.tableStatus == %status
}

rule checkcompliance when
    resourceType == "AWS::DynamoDB::Table"
    tableisactive {
    let pitr =
 supplementaryConfiguration.ContinuousBackupsDescription.pointInTimeRecoveryDescription.pointIn
    %pitr == "ENABLED" <<DynamoDB tables must have Point-in-Time Recovery enabled>>
}
```

Creating AWS Config Custom Lambda Rules

You can develop custom rules and add them to AWS Config with AWS Lambda functions.

You associate each custom rule with an Lambda function, which contains the logic that evaluates whether your AWS resources comply with the rule. You associate this function with your rule, and the rule invokes the function either in response to configuration changes or periodically. The function then evaluates whether your resources comply with your rule, and sends its evaluation results to AWS Config.

AWS Rule Development Kit (RDK)

The AWS Rule Development Kit (RDK) is designed to support a "Compliance-as-Code" workflow that is intuitive and productive. It abstracts away much of the undifferentiated heavy lifting associated with deploying AWS Config rules backed by custom Lambda functions, and provides a streamlined develop-deploy-monitor iterative process.

For step-by-step instruction, see the AWS Rule Development Kit (RDK) Documentation.

Example AWS Lambda Functions for AWS Config Rules (Node.js)

AWS Lambda executes functions in response to events that are published by AWS services. The function for an AWS Config Custom Lambda rule receives an event that is published by AWS Config, and the function then uses data that it receives from the event and that it retrieves from the AWS Config API to evaluate the compliance of the rule. The operations in a function for a Config rule differ depending on whether it performs an evaluation that is triggered by configuration changes or triggered periodically.

For information about common patterns within AWS Lambda functions, see Programming Model in the *AWS Lambda Developer Guide*.

Example Function for Evaluations Triggered by Configuration Changes

AWS Config will invoke a function like the following example when it detects a configuration change for a resource that is within a custom rule's scope.

If you use the AWS Config console to create a rule that is associated with a function like this example, choose **Configuration changes** as the trigger type. If you use the AWS Config API or AWS CLI to create the rule, set the `MessageType` attribute to `ConfigurationItemChangeNotification` and

`OversizedConfigurationItemChangeNotification`. These settings enable your rule to be triggered whenever AWS Config generates a configuration item or an oversized configuration item as a result of a resource change.

This example evaluates your resources and checks whether the instances match the resource type, `AWS::EC2::Instance`. The rule is triggered when AWS Config generates a configuration item or an oversized configuration item notification.

```
'use strict';

import { ConfigServiceClient, GetResourceConfigHistoryCommand,
 PutEvaluationsCommand } from "@aws-sdk/client-config-service";

const configClient = new ConfigServiceClient({});

// Helper function used to validate input
function checkDefined(reference, referenceName) {
    if (!reference) {
        throw new Error(`Error: ${referenceName} is not defined`);
    }
    return reference;
}

// Check whether the message type is OversizedConfigurationItemChangeNotification,
function isOverSizedChangeNotification(messageType) {
    checkDefined(messageType, 'messageType');
    return messageType === 'OversizedConfigurationItemChangeNotification';
}

// Get the configurationItem for the resource using the getResourceConfigHistory
 API.
async function getConfiguration(resourceType, resourceId, configurationCaptureTime,
 callback) {
    const input = { resourceType, resourceId, laterTime: new
 Date(configurationCaptureTime), limit: 1 };
    const command = new GetResourceConfigHistoryCommand(input);
    await configClient.send(command).then(
        (data) => {
            callback(null, data.configurationItems[0]);
        },
        (error) => {
            callback(error, null);
        }
```

```
    );

}

// Convert the oversized configuration item from the API model to the original
 invocation model.
function convertApiConfiguration(apiConfiguration) {
    apiConfiguration.awsAccountId = apiConfiguration.accountId;
    apiConfiguration.ARN = apiConfiguration.arn;
    apiConfiguration.configurationStateMd5Hash =
 apiConfiguration.configurationItemMD5Hash;
    apiConfiguration.configurationItemVersion = apiConfiguration.version;
    apiConfiguration.configuration = JSON.parse(apiConfiguration.configuration);
    if ({}.hasOwnProperty.call(apiConfiguration, 'relationships')) {
        for (let i = 0; i < apiConfiguration.relationships.length; i++) {
            apiConfiguration.relationships[i].name =
 apiConfiguration.relationships[i].relationshipName;
        }
    }
    return apiConfiguration;
}

// Based on the message type, get the configuration item either from the
 configurationItem object in the invoking event or with the getResourceConfigHistory
 API in the getConfiguration function.
async function getConfigurationItem(invokingEvent, callback) {
    checkDefined(invokingEvent, 'invokingEvent');
    if (isOverSizedChangeNotification(invokingEvent.messageType)) {
        const configurationItemSummary =
 checkDefined(invokingEvent.configurationItemSummary, 'configurationItemSummary');
        await getConfiguration(configurationItemSummary.resourceType,
 configurationItemSummary.resourceId,
 configurationItemSummary.configurationItemCaptureTime, (err, apiConfigurationItem)
 => {
            if (err) {
                callback(err);
            }
            const configurationItem = convertApiConfiguration(apiConfigurationItem);
            callback(null, configurationItem);
        });
    } else {
        checkDefined(invokingEvent.configurationItem, 'configurationItem');
        callback(null, invokingEvent.configurationItem);
    }
```

```
}

// Check whether the resource has been deleted. If the resource was deleted, then
 the evaluation returns not applicable.
function isApplicable(configurationItem, event) {
    checkDefined(configurationItem, 'configurationItem');
    checkDefined(event, 'event');
    const status = configurationItem.configurationItemStatus;
    const eventLeftScope = event.eventLeftScope;
    return (status === 'OK' || status === 'ResourceDiscovered') && eventLeftScope
 === false;
}

// In this example, the resource is compliant if it is an instance and its type
 matches the type specified as the desired type.
// If the resource is not an instance, then this resource is not applicable.
function evaluateChangeNotificationCompliance(configurationItem, ruleParameters) {
    checkDefined(configurationItem, 'configurationItem');
    checkDefined(configurationItem.configuration,
 'configurationItem.configuration');
    checkDefined(ruleParameters, 'ruleParameters');

    if (configurationItem.resourceType !== 'AWS::EC2::Instance') {
        return 'NOT_APPLICABLE';
    } else if (ruleParameters.desiredInstanceType ===
 configurationItem.configuration.instanceType) {
        return 'COMPLIANT';
    }
    return 'NON_COMPLIANT';
}

// Receives the event and context from AWS Lambda.
export const handler = async (event, context) => {
    checkDefined(event, 'event');
    const invokingEvent = JSON.parse(event.invokingEvent);
    const ruleParameters = JSON.parse(event.ruleParameters);
    await getConfigurationItem(invokingEvent, async (err, configurationItem) => {

        let compliance = 'NOT_APPLICABLE';
        let annotation = '';
        const putEvaluationsRequest = {};
        if (isApplicable(configurationItem, event)) {
            // Invoke the compliance checking function.
```

```
            compliance = evaluateChangeNotificationCompliance(configurationItem,
 ruleParameters);
            if (compliance === "NON_COMPLIANT") {
                annotation = "This is an annotation describing why the resource is
 not compliant.";
            }
        }
        // Initializes the request that contains the evaluation results.
        if (annotation) {
            putEvaluationsRequest.Evaluations = [
                {
                    ComplianceResourceType: configurationItem.resourceType,
                    ComplianceResourceId: configurationItem.resourceId,
                    ComplianceType: compliance,
                    OrderingTimestamp: new
 Date(configurationItem.configurationItemCaptureTime),
                    Annotation: annotation
                },
            ];
        } else {
            putEvaluationsRequest.Evaluations = [
                {
                    ComplianceResourceType: configurationItem.resourceType,
                    ComplianceResourceId: configurationItem.resourceId,
                    ComplianceType: compliance,
                    OrderingTimestamp: new
 Date(configurationItem.configurationItemCaptureTime),
                },
            ];
        }
        putEvaluationsRequest.ResultToken = event.resultToken;

        // Sends the evaluation results to AWS Config.
        await configClient.send(new PutEvaluationsCommand(putEvaluationsRequest));
    });
};
```

Function Operations

The function performs the following operations at runtime:

1. The function runs when AWS Lambda passes the `event` object to the `handler` function. In this example, the function accepts the optional `callback` parameter, which it uses to

return information to the caller. AWS Lambda also passes a `context` object, which contains information and methods that the function can use while it runs. Note that in newer versions of Lambda, context is no longer used.

2. The function checks whether the `messageType` for the event is a configuration item or an oversized configuration item, and then returns the configuration item.
3. The handler calls the `isApplicable` function to determine whether the resource was deleted.

> **Note**
>
> Rules reporting on deleted resources should return the evaluation result of `NOT_APPLICABLE` in order to avoid unnecessary rule evaluations.

4. The handler calls the `evaluateChangeNotificationCompliance` function and passes the `configurationItem` and `ruleParameters` objects that AWS Config published in the event.

   The function first evaluates whether the resource is an EC2 instance. If the resource is not an EC2 instance, the function returns a compliance value of `NOT_APPLICABLE`.

   The function then evaluates whether the `instanceType` attribute in the configuration item is equal to the `desiredInstanceType` parameter value. If the values are equal, the function returns `COMPLIANT`. If the values are not equal, the function returns `NON_COMPLIANT`.
5. The handler prepares to send the evaluation results to AWS Config by initializing the `putEvaluationsRequest` object. This object includes the `Evaluations` parameter, which identifies the compliance result, the resource type, and the ID of the resource that was evaluated. The `putEvaluationsRequest` object also includes the result token from the event, which identifies the rule and the event for AWS Config.
6. The handler sends the evaluation results to AWS Config by passing the object to the `putEvaluations` method of the `config` client.

Example Function for Periodic Evaluations

AWS Config will invoke a function like the following example for periodic evaluations. Periodic evaluations occur at the frequency that you specify when you define the rule in AWS Config.

If you use the AWS Config console to create a rule that is associated with a function like this example, choose **Periodic** as the trigger type. If you use the AWS Config API or AWS CLI to create the rule, set the `MessageType` attribute to `ScheduledNotification`.

This example checks whether the total number of a specified resource exceeds a specified maximum.

```
'use strict';
import { ConfigServiceClient, ListDiscoveredResourcesCommand,
 PutEvaluationsCommand } from "@aws-sdk/client-config-service";

const configClient = new ConfigServiceClient({});

// Receives the event and context from AWS Lambda.
export const handler = async (event, context, callback) => {
    // Parses the invokingEvent and ruleParameters values, which contain JSON
 objects passed as strings.
    var invokingEvent = JSON.parse(event.invokingEvent),
        ruleParameters = JSON.parse(event.ruleParameters),
        numberOfResources = 0;

    if (isScheduledNotification(invokingEvent) &&
 hasValidRuleParameters(ruleParameters, callback)) {
        await countResourceTypes(ruleParameters.applicableResourceType, "",
 numberOfResources, async function (err, count) {
            if (err === null) {
                var putEvaluationsRequest;
                const compliance = evaluateCompliance(ruleParameters.maxCount,
 count);
                var annotation = '';
                if (compliance === "NON_COMPLIANT") {
                    annotation = "Description of why the resource is not
 compliant.";
                }
                // Initializes the request that contains the evaluation results.
                if (annotation) {
                    putEvaluationsRequest = {
                        Evaluations: [{
                            // Applies the evaluation result to the AWS account
 published in the event.
                            ComplianceResourceType: 'AWS::::Account',
                            ComplianceResourceId: event.accountId,
                            ComplianceType: compliance,
```

```
                            OrderingTimestamp: new Date(),
                            Annotation: annotation
                        }],
                        ResultToken: event.resultToken
                    };
                } else {
                    putEvaluationsRequest = {
                        Evaluations: [{
                            // Applies the evaluation result to the AWS account
 published in the event.
                            ComplianceResourceType: 'AWS::::Account',
                            ComplianceResourceId: event.accountId,
                            ComplianceType: compliance,
                            OrderingTimestamp: new Date()
                        }],
                        ResultToken: event.resultToken
                    };
                }

                // Sends the evaluation results to AWS Config.
                try {
                    await configClient.send(new
 PutEvaluationsCommand(putEvaluationsRequest));
                }
                catch (e) {
                    callback(e, null);
                }
            } else {
                callback(err, null);
            }
        });
    } else {
        console.log("Invoked for a notification other than Scheduled Notification...
 Ignoring.");
    }
};

// Checks whether the invoking event is ScheduledNotification.
function isScheduledNotification(invokingEvent) {
    return (invokingEvent.messageType === 'ScheduledNotification');
}

// Checks the rule parameters to see if they are valid
function hasValidRuleParameters(ruleParameters, callback) {
```

```
    // Regular express to verify that applicable resource given is a resource type
    const awsResourcePattern = /^AWS::(\w*)::(\w*)$/;
    const isApplicableResourceType =
 awsResourcePattern.test(ruleParameters.applicableResourceType);
    // Check to make sure the maxCount in the parameters is an integer
    const maxCountIsInt = !isNaN(ruleParameters.maxCount) &&
 parseInt(Number(ruleParameters.maxCount)) == ruleParameters.maxCount && !
isNaN(parseInt(ruleParameters.maxCount, 10));
    if (!isApplicableResourceType) {
        callback("The applicableResourceType parameter is not a valid resource
 type.", null);
    }
    if (!maxCountIsInt) {
        callback("The maxCount parameter is not a valid integer.", null);
    }
    return isApplicableResourceType && maxCountIsInt;
}

// Checks whether the compliance conditions for the rule are violated.
function evaluateCompliance(maxCount, actualCount) {
    if (actualCount > maxCount) {
        return "NON_COMPLIANT";
    } else {
        return "COMPLIANT";
    }
}

// Counts the applicable resources that belong to the AWS account.
async function countResourceTypes(applicableResourceType, nextToken, count,
 callback) {
    const input = { resourceType: applicableResourceType, nextToken: nextToken };
    const command = new ListDiscoveredResourcesCommand(input);
    try {
        const response = await configClient.send(command);
        count = count + response.resourceIdentifiers.length;
        if (response.nextToken !== undefined && response.nextToken != null) {
            countResourceTypes(applicableResourceType, response.nextToken, count,
 callback);
        }
        callback(null, count);
    } catch (e) {
        callback(e, null);
    }
    return count;
```

```
}
```

Function Operations

The function performs the following operations at runtime:

1. The function runs when AWS Lambda passes the `event` object to the `handler` function. In this example, the function accepts the optional `callback` parameter, which it uses to return information to the caller. AWS Lambda also passes a `context` object, which contains information and methods that the function can use while it runs. Note that in newer versions of Lambda, context is no longer used.
2. To count the resources of the specified type, the handler calls the `countResourceTypes` function, and it passes the `applicableResourceType` parameter that it received from the event. The `countResourceTypes` function calls the `listDiscoveredResources` method of the `config` client, which returns a list of identifiers for the applicable resources. The function uses the length of this list to determine the number of applicable resources, and it returns this count to the handler.
3. The handler prepares to send the evaluation results to AWS Config by initializing the `putEvaluationsRequest` object. This object includes the `Evaluations` parameter, which identifies the compliance result and the AWS account that was published in the event. You can use the `Evaluations` parameter to apply the result to any resource type that is supported by AWS Config. The `putEvaluationsRequest` object also includes the result token from the event, which identifies the rule and the event for AWS Config.
4. Within the `putEvaluationsRequest` object, the handler calls the `evaluateCompliance` function. This function tests whether the number of applicable resources exceeds the maximum assigned to the `maxCount` parameter, which was provided by the event. If the number of resources exceeds the maximum, the function returns `NON_COMPLIANT`. If the number of resources does not exceed the maximum, the function returns `COMPLIANT`.
5. The handler sends the evaluation results to AWS Config by passing the object to the `putEvaluations` method of the `config` client.

Example AWS Lambda Functions for AWS Config Rules (Python)

AWS Lambda executes functions in response to events that are published by AWS services. The function for an AWS Config Custom Lambda rule receives an event that is published by AWS Config, and the function then uses data that it receives from the event and that it retrieves from the AWS Config API to evaluate the compliance of the rule. The operations in a function

for a Config rule differ depending on whether it performs an evaluation that is triggered by configuration changes or triggered periodically.

For information about common patterns within AWS Lambda functions, see Programming Model in the *AWS Lambda Developer Guide*.

Example Function for Evaluations Triggered by Configuration Changes

AWS Config will invoke a function like the following example when it detects a configuration change for a resource that is within a custom rule's scope.

If you use the AWS Config console to create a rule that is associated with a function like this example, choose **Configuration changes** as the trigger type. If you use the AWS Config API or AWS CLI to create the rule, set the `MessageType` attribute to `ConfigurationItemChangeNotification` and `OversizedConfigurationItemChangeNotification`. These settings enable your rule to be triggered whenever AWS Config generates a configuration item or an oversized configuration item as a result of a resource change.

```
import botocore
import boto3
import json
import datetime

# Set to True to get the lambda to assume the Role attached on the Config Service
 (useful for cross-account).
ASSUME_ROLE_MODE = False

# This gets the client after assuming the Config service role
# either in the same AWS account or cross-account.
def get_client(service, event):
    """Return the service boto client. It should be used instead of directly calling
 the client.
    Keyword arguments:
    service -- the service name used for calling the boto.client()
    event -- the event variable given in the lambda handler
    """
    if not ASSUME_ROLE_MODE:
        return boto3.client(service)
    credentials = get_assume_role_credentials(event["executionRoleArn"])
    return boto3.client(service, aws_access_key_id=credentials['AccessKeyId'],
                        aws_secret_access_key=credentials['SecretAccessKey'],
```

```
                        aws_session_token=credentials['SessionToken']
                       )

# Helper function used to validate input
def check_defined(reference, reference_name):
    if not reference:
        raise Exception('Error: ', reference_name, 'is not defined')
    return reference

# Check whether the message is OversizedConfigurationItemChangeNotification or not
def is_oversized_changed_notification(message_type):
    check_defined(message_type, 'messageType')
    return message_type == 'OversizedConfigurationItemChangeNotification'

# Get configurationItem using getResourceConfigHistory API
# in case of OversizedConfigurationItemChangeNotification
def get_configuration(resource_type, resource_id, configuration_capture_time):
    result = AWS_CONFIG_CLIENT.get_resource_config_history(
        resourceType=resource_type,
        resourceId=resource_id,
        laterTime=configuration_capture_time,
        limit=1)
    configurationItem = result['configurationItems'][0]
    return convert_api_configuration(configurationItem)

# Convert from the API model to the original invocation model
def convert_api_configuration(configurationItem):
    for k, v in configurationItem.items():
        if isinstance(v, datetime.datetime):
            configurationItem[k] = str(v)
    configurationItem['awsAccountId'] = configurationItem['accountId']
    configurationItem['ARN'] = configurationItem['arn']
    configurationItem['configurationStateMd5Hash'] =
 configurationItem['configurationItemMD5Hash']
    configurationItem['configurationItemVersion'] = configurationItem['version']
    configurationItem['configuration'] =
 json.loads(configurationItem['configuration'])
    if 'relationships' in configurationItem:
        for i in range(len(configurationItem['relationships'])):
            configurationItem['relationships'][i]['name'] =
 configurationItem['relationships'][i]['relationshipName']
    return configurationItem

# Based on the type of message get the configuration item
```

```
# either from configurationItem in the invoking event
# or using the getResourceConfigHistory API in getConfiguration function.
def get_configuration_item(invokingEvent):
    check_defined(invokingEvent, 'invokingEvent')
    if is_oversized_changed_notification(invokingEvent['messageType']):
        configurationItemSummary =
 check_defined(invokingEvent['configurationItemSummary'],
 'configurationItemSummary')
        return get_configuration(configurationItemSummary['resourceType'],
 configurationItemSummary['resourceId'],
 configurationItemSummary['configurationItemCaptureTime'])
    return check_defined(invokingEvent['configurationItem'], 'configurationItem')

# Check whether the resource has been deleted. If it has, then the evaluation is
 unnecessary.
def is_applicable(configurationItem, event):
    try:
        check_defined(configurationItem, 'configurationItem')
        check_defined(event, 'event')
    except:
        return True
    status = configurationItem['configurationItemStatus']
    eventLeftScope = event['eventLeftScope']
    if status == 'ResourceDeleted':
        print("Resource Deleted, setting Compliance Status to NOT_APPLICABLE.")
    return (status == 'OK' or status == 'ResourceDiscovered') and not eventLeftScope

def get_assume_role_credentials(role_arn):
    sts_client = boto3.client('sts')
    try:
        assume_role_response = sts_client.assume_role(RoleArn=role_arn,
 RoleSessionName="configLambdaExecution")
        return assume_role_response['Credentials']
    except botocore.exceptions.ClientError as ex:
        # Scrub error message for any internal account info leaks
        if 'AccessDenied' in ex.response['Error']['Code']:
            ex.response['Error']['Message'] = "AWS Config does not have permission
 to assume the IAM role."
        else:
            ex.response['Error']['Message'] = "InternalError"
            ex.response['Error']['Code'] = "InternalError"
        raise ex

def evaluate_change_notification_compliance(configuration_item, rule_parameters):
```

```
    check_defined(configuration_item, 'configuration_item')
    check_defined(configuration_item['configuration'],
 'configuration_item[\'configuration\']')
    if rule_parameters:
        check_defined(rule_parameters, 'rule_parameters')

    if (configuration_item['resourceType'] != 'AWS::EC2::Instance'):
        return 'NOT_APPLICABLE'

    elif rule_parameters.get('desiredInstanceType'):
        if (configuration_item['configuration']['instanceType'] in
 rule_parameters['desiredInstanceType']):
            return 'COMPLIANT'
    return 'NON_COMPLIANT'

def lambda_handler(event, context):

    global AWS_CONFIG_CLIENT

    check_defined(event, 'event')
    invoking_event = json.loads(event['invokingEvent'])
    rule_parameters = {}
    if 'ruleParameters' in event:
        rule_parameters = json.loads(event['ruleParameters'])

    compliance_value = 'NOT_APPLICABLE'

    AWS_CONFIG_CLIENT = get_client('config', event)
    configuration_item = get_configuration_item(invoking_event)
    if is_applicable(configuration_item, event):
        compliance_value = evaluate_change_notification_compliance(
                configuration_item, rule_parameters)

    response = AWS_CONFIG_CLIENT.put_evaluations(
       Evaluations=[
           {
               'ComplianceResourceType': invoking_event['configurationItem']
['resourceType'],
               'ComplianceResourceId': invoking_event['configurationItem']
['resourceId'],
               'ComplianceType': compliance_value,
               'OrderingTimestamp': invoking_event['configurationItem']
['configurationItemCaptureTime']
           },
```

```
        ],
        ResultToken=event['resultToken'])
```

Function Operations

The function performs the following operations at runtime:

1. The function runs when AWS Lambda passes the `event` object to the `handler` function. In this example, the function accepts the optional `callback` parameter, which it uses to return information to the caller. AWS Lambda also passes a `context` object, which contains information and methods that the function can use while it runs. Note that in newer versions of Lambda, context is no longer used.
2. The function checks whether the `messageType` for the event is a configuration item or an oversized configuration item, and then returns the configuration item.
3. The handler calls the `isApplicable` function to determine whether the resource was deleted.

   > **Note**
   >
   > Rules reporting on deleted resources should return the evaluation result of `NOT_APPLICABLE` in order to avoid unnecessary rule evaluations.

4. The handler calls the `evaluateChangeNotificationCompliance` function and passes the `configurationItem` and `ruleParameters` objects that AWS Config published in the event.

   The function first evaluates whether the resource is an EC2 instance. If the resource is not an EC2 instance, the function returns a compliance value of `NOT_APPLICABLE`.

   The function then evaluates whether the `instanceType` attribute in the configuration item is equal to the `desiredInstanceType` parameter value. If the values are equal, the function returns `COMPLIANT`. If the values are not equal, the function returns `NON_COMPLIANT`.
5. The handler prepares to send the evaluation results to AWS Config by initializing the `putEvaluationsRequest` object. This object includes the `Evaluations` parameter, which identifies the compliance result, the resource type, and the ID of the resource that was evaluated. The `putEvaluationsRequest` object also includes the result token from the event, which identifies the rule and the event for AWS Config.

6. The handler sends the evaluation results to AWS Config by passing the object to the `putEvaluations` method of the `config` client.

Example Function for Periodic Evaluations

AWS Config will invoke a function like the following example for periodic evaluations. Periodic evaluations occur at the frequency that you specify when you define the rule in AWS Config.

If you use the AWS Config console to create a rule that is associated with a function like this example, choose **Periodic** as the trigger type. If you use the AWS Config API or AWS CLI to create the rule, set the `MessageType` attribute to `ScheduledNotification`.

```
import botocore
import boto3
import json
import datetime

# Set to True to get the lambda to assume the Role attached on the Config Service
 (useful for cross-account).
ASSUME_ROLE_MODE = False
DEFAULT_RESOURCE_TYPE = 'AWS::::Account'

# This gets the client after assuming the Config service role
# either in the same AWS account or cross-account.
def get_client(service, event):
    """Return the service boto client. It should be used instead of directly calling
 the client.
    Keyword arguments:
    service -- the service name used for calling the boto.client()
    event -- the event variable given in the lambda handler
    """
    if not ASSUME_ROLE_MODE:
        return boto3.client(service)
    credentials = get_assume_role_credentials(event["executionRoleArn"])
    return boto3.client(service, aws_access_key_id=credentials['AccessKeyId'],
                        aws_secret_access_key=credentials['SecretAccessKey'],
                        aws_session_token=credentials['SessionToken']
                       )

def get_assume_role_credentials(role_arn):
    sts_client = boto3.client('sts')
    try:
```

```
        assume_role_response = sts_client.assume_role(RoleArn=role_arn,
 RoleSessionName="configLambdaExecution")
        return assume_role_response['Credentials']
    except botocore.exceptions.ClientError as ex:
        # Scrub error message for any internal account info leaks
        if 'AccessDenied' in ex.response['Error']['Code']:
            ex.response['Error']['Message'] = "AWS Config does not have permission
 to assume the IAM role."
        else:
            ex.response['Error']['Message'] = "InternalError"
            ex.response['Error']['Code'] = "InternalError"
        raise ex

# Check whether the message is a ScheduledNotification or not.
def is_scheduled_notification(message_type):
    return message_type == 'ScheduledNotification'

def count_resource_types(applicable_resource_type, next_token, count):
    resource_identifier =
 AWS_CONFIG_CLIENT.list_discovered_resources(resourceType=applicable_resource_type,
 nextToken=next_token)
    updated = count + len(resource_identifier['resourceIdentifiers']);
    return updated

# Evaluates the configuration items in the snapshot and returns the compliance value
 to the handler.
def evaluate_compliance(max_count, actual_count):
    return 'NON_COMPLIANT' if int(actual_count) > int(max_count) else 'COMPLIANT'

def evaluate_parameters(rule_parameters):
    if 'applicableResourceType' not in rule_parameters:
        raise ValueError('The parameter with "applicableResourceType" as key must be
 defined.')
    if not rule_parameters['applicableResourceType']:
        raise ValueError('The parameter "applicableResourceType" must have a defined
 value.')
    return rule_parameters

# This generate an evaluation for config
def build_evaluation(resource_id, compliance_type, event,
 resource_type=DEFAULT_RESOURCE_TYPE, annotation=None):
    """Form an evaluation as a dictionary. Usually suited to report on scheduled
 rules.
    Keyword arguments:
```

```
    resource_id -- the unique id of the resource to report
    compliance_type -- either COMPLIANT, NON_COMPLIANT or NOT_APPLICABLE
    event -- the event variable given in the lambda handler
    resource_type -- the CloudFormation resource type (or AWS::::Account) to report
 on the rule (default DEFAULT_RESOURCE_TYPE)
    annotation -- an annotation to be added to the evaluation (default None)
    """
    eval_cc = {}
    if annotation:
        eval_cc['Annotation'] = annotation
    eval_cc['ComplianceResourceType'] = resource_type
    eval_cc['ComplianceResourceId'] = resource_id
    eval_cc['ComplianceType'] = compliance_type
    eval_cc['OrderingTimestamp'] = str(json.loads(event['invokingEvent'])
['notificationCreationTime'])
    return eval_cc

def lambda_handler(event, context):

    global AWS_CONFIG_CLIENT

    evaluations = []
    rule_parameters = {}
    resource_count = 0
    max_count = 0

    invoking_event = json.loads(event['invokingEvent'])
    if 'ruleParameters' in event:
        rule_parameters = json.loads(event['ruleParameters'])
        valid_rule_parameters = evaluate_parameters(rule_parameters)

    compliance_value = 'NOT_APPLICABLE'

    AWS_CONFIG_CLIENT = get_client('config', event)
    if is_scheduled_notification(invoking_event['messageType']):
        result_resource_count =
 count_resource_types(valid_rule_parameters['applicableResourceType'], '',
 resource_count)

    if valid_rule_parameters.get('maxCount'):
        max_count = valid_rule_parameters['maxCount']

    compliance_value = evaluate_compliance(max_count, result_resource_count)
```

```
    evaluations.append(build_evaluation(event['accountId'], compliance_value, event,
resource_type=DEFAULT_RESOURCE_TYPE))
    response = AWS_CONFIG_CLIENT.put_evaluations(Evaluations=evaluations,
ResultToken=event['resultToken'])
```

Function Operations

The function performs the following operations at runtime:

1. The function runs when AWS Lambda passes the `event` object to the `handler` function. In this example, the function accepts the optional `callback` parameter, which it uses to return information to the caller. AWS Lambda also passes a `context` object, which contains information and methods that the function can use while it runs. Note that in newer versions of Lambda, context is no longer used.
2. To count the resources of the specified type, the handler calls the `countResourceTypes` function, and it passes the `applicableResourceType` parameter that it received from the event. The `countResourceTypes` function calls the `listDiscoveredResources` method of the `config` client, which returns a list of identifiers for the applicable resources. The function uses the length of this list to determine the number of applicable resources, and it returns this count to the handler.
3. The handler prepares to send the evaluation results to AWS Config by initializing the `putEvaluationsRequest` object. This object includes the `Evaluations` parameter, which identifies the compliance result and the AWS account that was published in the event. You can use the `Evaluations` parameter to apply the result to any resource type that is supported by AWS Config. The `putEvaluationsRequest` object also includes the result token from the event, which identifies the rule and the event for AWS Config.
4. Within the `putEvaluationsRequest` object, the handler calls the `evaluateCompliance` function. This function tests whether the number of applicable resources exceeds the maximum assigned to the `maxCount` parameter, which was provided by the event. If the number of resources exceeds the maximum, the function returns `NON_COMPLIANT`. If the number of resources does not exceed the maximum, the function returns `COMPLIANT`.
5. The handler sends the evaluation results to AWS Config by passing the object to the `putEvaluations` method of the `config` client.

Example Events for AWS Config Rules

When the trigger for a rule occurs, AWS Config invokes the rule's AWS Lambda function by publishing an event. Then AWS Lambda executes the function by passing the event to the function's handler.

Example Event for Evaluations Triggered by Configuration Changes

AWS Config publishes an event when it detects a configuration change for a resource that is within a rule's scope. The following example event shows that the rule was triggered by a configuration change for an EC2 instance.

```
{
    "invokingEvent": "{\"configurationItem\":{\"configurationItemCaptureTime
\":\"2016-02-17T01:36:34.043Z\",\"awsAccountId\":\"123456789012\",
\"configurationItemStatus\":\"OK\",\"resourceId\":\"i-00000000\",\"ARN
\":\"arn:aws:ec2:us-east-2:123456789012:instance/i-00000000\",\"awsRegion
\":\"us-east-2\",\"availabilityZone\":\"us-east-2a\",\"resourceType\":
\"AWS::EC2::Instance\",\"tags\":{\"Foo\":\"Bar\"},\"relationships\":[{\"resourceId
\":\"eipalloc-00000000\",\"resourceType\":\"AWS::EC2::EIP\",\"name\":\"Is
 attached to ElasticIp\"}],\"configuration\":{\"foo\":\"bar\"}},\"messageType\":
\"ConfigurationItemChangeNotification\"}",
    "ruleParameters": "{\"myParameterKey\":\"myParameterValue\"}",
    "resultToken": "myResultToken",
    "eventLeftScope": false,
    "executionRoleArn": "arn:aws:iam::123456789012:role/config-role",
    "configRuleArn": "arn:aws:config:us-east-2:123456789012:config-rule/config-
rule-0123456",
    "configRuleName": "change-triggered-config-rule",
    "configRuleId": "config-rule-0123456",
    "accountId": "123456789012",
    "version": "1.0"
}
```

Example Event for Evaluations Triggered by Oversized Configuration Changes

Some resource changes generate oversized configuration items. The following example event shows that the rule was triggered by an oversized configuration change for an EC2 instance.

```
{
        "invokingEvent": "{\"configurationItemSummary\": {\"changeType\":
 \"UPDATE\",\"configurationItemVersion\": \"1.2\",\"configurationItemCaptureTime
```

```
\":\"2016-10-06T16:46:16.261Z\",\"configurationStateId\": 0,\"awsAccountId
\":\"123456789012\",\"configurationItemStatus\": \"OK\",\"resourceType
\": \"AWS::EC2::Instance\",\"resourceId\":\"i-00000000\",\"resourceName
\":null,\"ARN\":\"arn:aws:ec2:us-west-2:123456789012:instance/i-00000000\",
\"awsRegion\": \"us-west-2\",\"availabilityZone\":\"us-west-2a\",
\"configurationStateMd5Hash\":\"8f1ee69b287895a0f8bc5753eca68e96\",
\"resourceCreationTime\":\"2016-10-06T16:46:10.489Z\"},\"messageType\":
\"OversizedConfigurationItemChangeNotification\"}",
        "ruleParameters": "{\"myParameterKey\":\"myParameterValue\"}",
        "resultToken": "myResultToken",
        "eventLeftScope": false,
        "executionRoleArn": "arn:aws:iam::123456789012:role/config-role",
        "configRuleArn": "arn:aws:config:us-east-2:123456789012:config-rule/config-
rule-ec2-managed-instance-inventory",
        "configRuleName": "change-triggered-config-rule",
        "configRuleId": "config-rule-0123456",
        "accountId": "123456789012",
        "version": "1.0"
    }
```

Example Event for Evaluations Triggered by Periodic Frequency

AWS Config publishes an event when it evaluates your resources at a frequency that you specify (such as every 24 hours). The following example event shows that the rule was triggered by a periodic frequency.

```
{
    "invokingEvent": "{\"awsAccountId\":\"123456789012\",\"notificationCreationTime
\":\"2016-07-13T21:50:00.373Z\",\"messageType\":\"ScheduledNotification\",
\"recordVersion\":\"1.0\"}",
    "ruleParameters": "{\"myParameterKey\":\"myParameterValue\"}",
    "resultToken": "myResultToken",
    "eventLeftScope": false,
    "executionRoleArn": "arn:aws:iam::123456789012:role/config-role",
    "configRuleArn": "arn:aws:config:us-east-2:123456789012:config-rule/config-
rule-0123456",
    "configRuleName": "periodic-config-rule",
    "configRuleId": "config-rule-6543210",
    "accountId": "123456789012",
    "version": "1.0"
}
```

Event Attributes

The JSON object for an AWS Config event contains the following attributes:

`invokingEvent`

The event that triggers the evaluation for a rule. If the event is published in response to a resource configuration change, the value for this attribute is a string that contains a JSON `configurationItem` or a `configurationItemSummary` (for oversized configuration items). The configuration item represents the state of the resource at the moment that AWS Config detected the change. For an example of a configuration item, see the output produced by the `get-resource-config-history` AWS CLI command in Viewing Configuration History.

If the event is published for a periodic evaluation, the value is a string that contains a JSON object. The object includes information about the evaluation that was triggered.

For each type of event, a function must parse the string with a JSON parser to be able to evaluate its contents, as shown in the following Node.js example:

```
var invokingEvent = JSON.parse(event.invokingEvent);
```

`ruleParameters`

Key/value pairs that the function processes as part of its evaluation logic. You define parameters when you use the AWS Config console to create a Custom Lambda rule. You can also define parameters with the `InputParameters` attribute in the `PutConfigRule` AWS Config API request or the `put-config-rule` AWS CLI command.

The JSON code for the parameters is contained within a string, so a function must parse the string with a JSON parser to be able to evaluate its contents, as shown in the following Node.js example:

```
var ruleParameters = JSON.parse(event.ruleParameters);
```

`resultToken`

A token that the function must pass to AWS Config with the `PutEvaluations` call.

`eventLeftScope`

A Boolean value that indicates whether the AWS resource to be evaluated has been removed from the rule's scope. If the value is `true`, the function indicates that the evaluation can be

ignored by passing `NOT_APPLICABLE` as the value for the `ComplianceType` attribute in the `PutEvaluations` call.

`executionRoleArn`

The ARN of the IAM role that is assigned to AWS Config.

`configRuleArn`

The ARN that AWS Config assigned to the rule.

`configRuleName`

The name that you assigned to the rule that caused AWS Config to publish the event and invoke the function.

`configRuleId`

The ID that AWS Config assigned to the rule.

`accountId`

The ID of the AWS account that owns the rule.

`version`

A version number assigned by AWS. The version will increment if AWS adds attributes to AWS Config events. If a function requires an attribute that is only in events that match or exceed a specific version, then that function can check the value of this attribute.

The current version for AWS Config events is 1.0.

Managing Deleted Resources for AWS Config Custom Lambda Rules

Rules reporting on deleted resources should return the evaluation result of `NOT_APPLICABLE` in order to avoid unnecessary rule evaluations.

When you delete a resource, AWS Config creates a `configurationItem` with `ResourceDeleted` for the `configurationItemStatus`. You can use this metadata to check if a rule reports on a deleted resource. For more information on configuration items, see Concepts | Configuration Items.

Include the following code snippets to check for deleted resources and set the evaluation result of an AWS Config custom lambda rule to `NOT_APPLICABLE` if it reports on a deleted resource:

Custom Lambda Rules (Node.js)

```
// Check whether the resource has been deleted. If the resource was deleted, then
 the evaluation returns not applicable.
function isApplicable(configurationItem, event) {
    checkDefined(configurationItem, 'configurationItem');
    checkDefined(event, 'event');
    const status = configurationItem.configurationItemStatus;
    const eventLeftScope = event.eventLeftScope;
    return (status === 'OK' || status === 'ResourceDiscovered') && eventLeftScope
 === false;
}
```

Custom Lambda Rules (Python)

```
# Check whether the resource has been deleted. If the resource was deleted, then the
 evaluation returns not applicable.
def is_applicable(configurationItem, event):
    try:
        check_defined(configurationItem, 'configurationItem')
        check_defined(event, 'event')
    except:
        return True
    status = configurationItem['configurationItemStatus']
    eventLeftScope = event['eventLeftScope']
    if status == 'ResourceDeleted':
        print("Resource Deleted, setting Compliance Status to NOT_APPLICABLE.")
    return (status == 'OK' or status == 'ResourceDiscovered') and not eventLeftScope
```

> **Note**
>
> AWS Config managed rules and AWS Config custom policy rules handle this behavior by default.
>
> If you create an AWS Config custom lambd rule with Python using the AWS Config Development Kit (RDK) and AWS Config Development Kit Library (RDKlib), the imported Evaluator class will check this behavior. For information on how to write rules with the RDK and RDKlib, see Writing rules with the RDK and RDKlib.

Service-Linked AWS Config Rules

A service-linked AWS Config rule is a unique type of AWS Config managed rules that supports other AWS services to create AWS Config rules in your account. Service-linked rules are predefined to include all the permissions required to call other AWS services on your behalf. These rules are similar to standards that an AWS service recommends in your AWS account for compliance verification.

These service-linked AWS Config rules are owned by AWS service teams. The AWS service team creates these rules in your AWS account. You have read-only access to these rules. You cannot edit or delete these rules if you are subscribed to AWS service that these rules are linked to.

Service-linked rules and the AWS Command Line Interface

With the AWS CLI, the PutConfigRule, DeleteConfigRule, and DeleteEvaluationResults APIs return access denied with the following error message:

```
INSUFFICIENT_SLCR_PERMISSIONS = "An AWS service owns
ServiceLinkedConfigRule. You do not have permissions to take action on this
rule."
```

Service-linked rules and the AWS Config console

In the AWS Config console, the service-linked AWS Config rules are visible in the **Rules** page. The **Edit** and **Delete results** buttons are greyed in the console to restrict you from editing the rule. You can view details of the rule by choosing the rule.

Service-linked rules, remediation actions, and conformance packs

To add remediation actions to a service-linked rules in a conformance pack, you need to add the remediation action to the conformance pack template itself, and then update the conformance pack with your updated template. For information on updating conformance packs, see Deploying a Conformance Pack (Console), Deploying a Conformance Pack (AWS CLI) and Managing Organizational Conformance Packs.

Editing and deleting service-linked rules

To edit or delete a service-linked rule, contact the AWS service that created the rule. For example, for service-linked rules created by AWS Security Hub, you can remove a service-linked rule by following these steps in the *AWS Security Hub User Guide*: Disabling a security standard.

Managing AWS Config Rules Across All Accounts in Your Organization

> **Important**
>
> Organizational rules can only be created using the API or CLI. This operation is not supported in the AWS Config console.

AWS Config allows you to manage AWS Config rules across all AWS accounts within an organization. You can:

- Centrally create, update, and delete AWS Config rules across all accounts in your organization.
- Deploy a common set of AWS Config rules across all accounts and specify accounts where AWS Config rules should not be created.
- Use the APIs from the management account in AWS Organizations to enforce governance by ensuring that the underlying AWS Config rules are not modifiable by your organization's member accounts.

Considerations

For deployments across different regions

The API call to deploy rules and conformance packs across accounts is AWS Region specific. At the organization level, you need to change the context of your API call to a different region if you want to deploy rules in other regions. For example, to deploy a rule in US East (N. Virginia), change the region to US East (N. Virginia) and then call `PutOrganizationConfigRule`.

For accounts within an organization

If a new account joins an organization, the rule or conformance pack is deployed to that account. When an account leaves an organization, the rule or conformance pack is removed.

If you deploy an organizational rule or conformance pack in an organization administrator account, and then establish a delegated administrator and deploy an organizational rule or conformance pack in the delegated administrator account, you won't be able to see the organizational rule or conformance pack in the organization administrator account from the delegated administrator

account or see the organizational rule or conformance pack in the delegated administrator account from organization administrator account. The DescribeOrganizationConfigRules and DescribeOrganizationConformancePacks APIs can only see and interact with the organization-related resource that were deployed from within the account calling those APIs.

Retry mechanism for new accounts added to an organization

Deployment of existing organizational rules and conformance packs will only be retried for 7 hours after an account is added to your organization if a recorder is not available. You are expected to create a recorder if one doesn't exist within 7 hours of adding an account to your organization.

Organization management accounts, delegated administrators, and service-linked roles

If you are using an organization management account and intend to use a delegated administrator for organizational deployment, be aware that AWS Config won't automatically create the service-linked role (SLR). You must manually create the service-linked role (SLR) separately using IAM.

If you do not have an SLR for your management account, you will not be able to deploy resources to that account from a delegated administrator account. You will still be able to deploy AWS Config rules to member accounts from management and delegated administrator accounts. For more information, see Using service-linked roles in the *AWS Identity and Access Management (IAM) User Guide*.

Deployment

For information on how to integrate AWS Config with AWS Organizations, see AWS Config and AWS Organizations in the *AWS Organizations User Guide*. Ensure AWS Config recording is on before you use the following APIs to manage AWS Config rules across all AWS accounts within an organization:

- PutOrganizationConfigRule, adds or updates organization config rule for your entire organization evaluating whether your AWS resources comply with your desired configurations.
- DescribeOrganizationConfigRules, returns a list of organization config rules.
- GetOrganizationConfigRuleDetailedStatus, returns detailed status for each member account within an organization for a given organization config rule.
- GetOrganizationCustomRulePolicy, returns the policy definition containing the logic for your organization config custom policy rule.
- DescribeOrganizationConfigRuleStatuses, provides organization config rule deployment status for an organization.

- DeleteOrganizationConfigRule, deletes the specified organization config rule and all of its evaluation results from all member accounts in that organization.

Region Support

Deploying AWS Config Rules across member accounts in an AWS Organization is supported in the following Regions.

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS
Asia Pacific	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
(Hyderabad)			
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Adding AWS Config Rules

You can use the AWS Config console or the AWS SDKs to add rules.

Topics

- Adding Rules (Console)
- Adding Rules (AWS SDKs)

Adding Rules (Console)

The **Rules** page shows your rules and their current compliance results in a table. The result for each rule is **Evaluating...** until AWS Config finishes evaluating your resources against the rule. You can

update the results with the refresh button. When AWS Config finishes evaluations, you can see the rules and resource types that are compliant or noncompliant. For more information, see Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config.

> **Note**
>
> When you add a new rule, AWS Config evaluates the applicable resources in your resource inventory, including previously recorded resources. For example, if you recorded `AWS::IoT::Policy` resources but later excluded them from recording, AWS Config retains the initial configuration items (CIs) in your inventory. Although AWS Config no longer updates these CIs when their associated resource types are excluded from recording, it retains their last recorded state and evaluates them when you add applicable rules.
> AWS Config does not evaluate resources that are not in the resource inventory. For example, if you add the amplify-branch-tagged rule but don't record and have never recorded `AWS::Amplify::Branch` resources, AWS Config can't evaluate whether the AWS Amplify branches in your account are compliant or noncompliant.
> For more information, see Recording AWS Resources with AWS Config.

Adding rules

To add a rule

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the region selector is set to a region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**.
4. On the **Rules** page, choose **Add rule**.
5. On the **Specify rule type** page, specify the rule type by completing the following steps:
   a. Type in the search field to filter the list of managed rules by rule name, description, and label. For example, type **EC2** to return rules that evaluate EC2 resource types or type **periodic** to return rules that are triggered periodically.

b. You can also create your own custom rule. Choose **Create custom rule using Lambda** or **Create custom rule using Guard**, and follow the procedure in Creating AWS Config Custom Lambda Rules or Creating AWS Config Custom Policy Rules.

6. On the **Configure rule** page, configure your rule by completing the following steps:

   a. For **Name**, type a unique name for the rule.

   b. For **Description**, type a description for the rule.

   c. For **Evaluation mode**, choose when in the resource creation and management process you want AWS Config to evaluate your resources. Depending on the rule, AWS Config can evaluate your resource configurations before a resource has been deployed, after a resource has been deployed, or both.

      i. Choose **Turn on proactive evaluation** to allow you to run evaluations on the configuration settings of your resources before they are deployed.

         After you have turned on proactive evaluation, you can use the StartResourceEvaluation API and GetResourceEvaluationSummary API to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region.

         For more information on using this commands, see Evaluating Your Resources with AWS Config Rules. For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.

      ii. Choose **Turn on detective evaluation** to evaluate the configuration settings of your existing resources.

         For detective evaluation, there are two types of triggers: **When configuration changes** and **Periodic**.

         A. If the trigger types for your rule include **Configuration changes**, specify one of the following options for **Scope of changes** with which AWS Config invokes your Lambda function:

            - **Resources** – When a resource that matches the specified resource type, or the type plus identifier, is created, changed, or deleted.
            - **Tags** – When a resource with the specified tag is created, changed, or deleted.

- **All changes** – When a resource recorded by AWS Config is created, changed, or deleted.

  AWS Config runs the evaluation when it detects a change to a resource that matches the rule's scope. You can use the scope to define which resources initiate evaluations.

  B. If the trigger types for your rule include **Periodic**, specify the **Frequency** with which AWS Config invokes your Lambda function.

d. For **Parameters**, you can customize the values for the provided keys if your rule includes parameters. A parameter is an attribute that your resources must adhere to before they are considered compliant with the rule.

7. On the **Review and create** page, review all your selections before adding the rule to your AWS account. If your rule is not working as expected, you might see one of the following for **Compliance**:

   - **No results reported** - AWS Config evaluated your resources against the rule. The rule did not apply to the AWS resources in its scope, the specified resources were deleted, or the evaluation results were deleted. To get evaluation results, update the rule, change its scope, or choose **Re-evaluate**.

     This message may also appear if the rule didn't report evaluation results.
   - **No resources in scope** - AWS Config cannot evaluate your recorded AWS resources against this rule because none of your resources are within the rule’s scope. To get evaluation results, edit the rule and change its scope, or add resources for AWS Config to record by using the **Settings** page.
   - **Evaluations failed** - For information that can help you determine the problem, choose the rule name to open its details page and see the error message.

Adding Rules (AWS SDKs)

Adding rules

The following code examples show how to use `PutConfigRule`.

CLI

AWS CLI

To add an AWS managed Config rule

The following command provides JSON code to add an AWS managed Config rule:

```
aws configservice put-config-rule --config-rule file://
RequiredTagsForEC2Instances.json
```

`RequiredTagsForEC2Instances.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "RequiredTagsForEC2Instances",
  "Description": "Checks whether the CostCenter and Owner tags are applied to EC2
 instances.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
  "Source": {
    "Owner": "AWS",
    "SourceIdentifier": "REQUIRED_TAGS"
  },
  "InputParameters": "{\"tag1Key\":\"CostCenter\",\"tag2Key\":\"Owner\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because the rule is a managed rule, the `Owner` attribute is set to `AWS`, and the `SourceIdentifier` attribute is set to the rule identifier, `REQUIRED_TAGS`. For the `InputParameters` attribute, the tag keys that the rule requires, `CostCenter` and `Owner`, are specified.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

To add a customer managed Config rule

The following command provides JSON code to add a customer managed Config rule:

```
aws configservice put-config-rule --config-rule file://
InstanceTypesAreT2micro.json
```

`InstanceTypesAreT2micro.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "InstanceTypesAreT2micro",
  "Description": "Evaluates whether EC2 instances are the t2.micro type.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
  "Source": {
    "Owner": "CUSTOM_LAMBDA",
    "SourceIdentifier": "arn:aws:lambda:us-
east-1:123456789012:function:InstanceTypeCheck",
    "SourceDetails": [
      {
        "EventSource": "aws.config",
        "MessageType": "ConfigurationItemChangeNotification"
      }
    ]
  },
  "InputParameters": "{\"desiredInstanceType\":\"t2.micro\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because this rule is a customer managed rule, the `Owner` attribute is set to `CUSTOM_LAMBDA`, and the `SourceIdentifier` attribute is set to the ARN of the AWS Lambda function. The `SourceDetails` object is required. The parameters that are specified for the `InputParameters` attribute are passed to the AWS Lambda function when AWS Config invokes it to evaluate resources against the rule.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

- For API details, see PutConfigRule in *AWS CLI Command Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client


    def put_config_rule(self, rule_name):
        """
        Sets a configuration rule that prohibits making Amazon S3 buckets
 publicly
        readable.

        :param rule_name: The name to give the rule.
        """
        try:
            self.config_client.put_config_rule(
                ConfigRule={
                    "ConfigRuleName": rule_name,
                    "Description": "S3 Public Read Prohibited Bucket Rule",
                    "Scope": {
                        "ComplianceResourceTypes": [
                            "AWS::S3::Bucket",
                        ],
                    },
                    "Source": {
                        "Owner": "AWS",
```

```
                        "SourceIdentifier": "S3_BUCKET_PUBLIC_READ_PROHIBITED",
                    },
                    "InputParameters": "{}",
                    "ConfigRuleState": "ACTIVE",
                }
            )
            logger.info("Created configuration rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't create configuration rule %s.", rule_name)
            raise
```

- For API details, see PutConfigRule in *AWS SDK for Python (Boto3) API Reference*.

Updating AWS Config Rules

You can use the AWS Config console or the AWS SDKs to update your rules.

Topics

- Updating Rules (Console)
- Updating Rules (AWS SDKs)

Updating Rules (Console)

The **Rules** page shows your rules and their current compliance results in a table. The result for each rule is **Evaluating...** until AWS Config finishes evaluating your resources against the rule. You can update the results with the refresh button. When AWS Config finishes evaluations, you can see the rules and resource types that are compliant or noncompliant. For more information, see Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config.

Updating rules

To update a rule

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.

2. In the AWS Management Console menu, verify that the region selector is set to a region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**.
4. Choose a rule and **Edit rule** for the rule that you want to update.
5. Modify the settings on the **Edit rule** page to change your rule as needed.
6. Choose **Save**.

Updating Rules (AWS SDKs)

Updating rules

If you are updating a rule that you added previously, you can specify the rule by `ConfigRuleName`, `ConfigRuleId`, or `ConfigRuleArn` in the `ConfigRule` data type that you use in this request. You use the same `PutConfigRule` command that you use when adding a rule.

The following code examples show how to use `PutConfigRule`.

CLI

AWS CLI

To add an AWS managed Config rule

The following command provides JSON code to add an AWS managed Config rule:

```
aws configservice put-config-rule --config-rule file://
RequiredTagsForEC2Instances.json
```

`RequiredTagsForEC2Instances.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "RequiredTagsForEC2Instances",
  "Description": "Checks whether the CostCenter and Owner tags are applied to EC2
 instances.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
```

```
  "Source": {
    "Owner": "AWS",
    "SourceIdentifier": "REQUIRED_TAGS"
  },
  "InputParameters": "{\"tag1Key\":\"CostCenter\",\"tag2Key\":\"Owner\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because the rule is a managed rule, the `Owner` attribute is set to `AWS`, and the `SourceIdentifier` attribute is set to the rule identifier, `REQUIRED_TAGS`. For the `InputParameters` attribute, the tag keys that the rule requires, `CostCenter` and `Owner`, are specified.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

To add a customer managed Config rule

The following command provides JSON code to add a customer managed Config rule:

```
aws configservice put-config-rule --config-rule file://
InstanceTypesAreT2micro.json
```

`InstanceTypesAreT2micro.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "InstanceTypesAreT2micro",
  "Description": "Evaluates whether EC2 instances are the t2.micro type.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
  "Source": {
    "Owner": "CUSTOM_LAMBDA",
    "SourceIdentifier": "arn:aws:lambda:us-
east-1:123456789012:function:InstanceTypeCheck",
    "SourceDetails": [
      {
        "EventSource": "aws.config",
        "MessageType": "ConfigurationItemChangeNotification"
```

```
      }
    ]
  },
  "InputParameters": "{\"desiredInstanceType\":\"t2.micro\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because this rule is a customer managed rule, the `Owner` attribute is set to `CUSTOM_LAMBDA`, and the `SourceIdentifier` attribute is set to the ARN of the AWS Lambda function. The `SourceDetails` object is required. The parameters that are specified for the `InputParameters` attribute are passed to the AWS Lambda function when AWS Config invokes it to evaluate resources against the rule.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

- For API details, see PutConfigRule in *AWS CLI Command Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client
```

```
    def put_config_rule(self, rule_name):
        """
        Sets a configuration rule that prohibits making Amazon S3 buckets
publicly
        readable.

        :param rule_name: The name to give the rule.
        """
        try:
            self.config_client.put_config_rule(
                ConfigRule={
                    "ConfigRuleName": rule_name,
                    "Description": "S3 Public Read Prohibited Bucket Rule",
                    "Scope": {
                        "ComplianceResourceTypes": [
                            "AWS::S3::Bucket",
                        ],
                    },
                    "Source": {
                        "Owner": "AWS",
                        "SourceIdentifier": "S3_BUCKET_PUBLIC_READ_PROHIBITED",
                    },
                    "InputParameters": "{}",
                    "ConfigRuleState": "ACTIVE",
                }
            )
            logger.info("Created configuration rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't create configuration rule %s.", rule_name)
            raise
```

- For API details, see PutConfigRule in *AWS SDK for Python (Boto3) API Reference*.

Deleting AWS Config Rules

You can use the AWS Config console or the AWS SDKs to delete your rules.

Topics

- Considerations

- Deleting Rules (Console)
- Deleting Rules (AWS SDKs)

Considerations

Recommendation: Consider excluding the `AWS::Config::ResourceCompliance` resource type from recording before deleting rules

Deleting rules creates configuration items (CIs) for `AWS::Config::ResourceCompliance` that can affect your costs for the configuration recorder. If you are deleting rules which evaluate a large number of resource types, this can lead to a spike in the number of CIs recorded.

To avoid the associated costs, you can opt to disable recording for the `AWS::Config::ResourceCompliance` resource type before deleting rules, and re-enable recording after the rules have been deleted.

However, since deleting rules is an asynchronous process, it might take an hour or more to complete. During the time when recording is disabled for `AWS::Config::ResourceCompliance`, rule evaluations will not be recorded in the associated resource's history.

Deleting Rules (Console)

The **Rules** page shows your rules and their current compliance results in a table. The result for each rule is **Evaluating...** until AWS Config finishes evaluating your resources against the rule. You can update the results with the refresh button. When AWS Config finishes evaluations, you can see the rules and resource types that are compliant or noncompliant. For more information, see Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config.

> **Note**
>
> AWS Config evaluates only the resource types that it is recording. For example, if you add the **cloudtrail-enabled** rule but don't record the CloudTrail trail resource type, AWS Config can't evaluate whether the trails in your account are compliant or noncompliant. For more information, see Recording AWS Resources with AWS Config.

Deleting rules

To delete a rule

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the region selector is set to a region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**.
4. Choose a rule from the table that you want to delete.
5. From the **Actions** dropdown list, choose **Delete rule**.
6. When prompted, type "Delete" (case-sensitive) and then choose **Delete**.

Deleting Rules (AWS SDKs)

Deleting rules

The following code examples show how to use `DeleteConfigRule`.

CLI

AWS CLI

To delete an AWS Config rule

The following command deletes an AWS Config rule named `MyConfigRule`:

```
aws configservice delete-config-rule --config-rule-name MyConfigRule
```

- For API details, see DeleteConfigRule in *AWS CLI Command Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client


    def delete_config_rule(self, rule_name):
        """
        Delete the specified rule.

        :param rule_name: The name of the rule to delete.
        """
        try:
            self.config_client.delete_config_rule(ConfigRuleName=rule_name)
            logger.info("Deleted rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't delete rule %s.", rule_name)
            raise
```

- For API details, see DeleteConfigRule in *AWS SDK for Python (Boto3) API Reference*.

Viewing Details and Compliance Information for your AWS Config Rules

> **Important**
>
> For accurate reporting on the compliance status, you must record the `AWS::Config::ResourceCompliance` resource type. For more information, see Recording AWS Resources.

You can use the AWS Config console or the AWS SDKs to view your rules.

Topics

- Viewing Rules (Console)
- Viewing Rules (AWS SDKs)

Viewing Rules (Console)

The **Rules** page shows your rules and their current compliance results in a table. The result for each rule is **Evaluating...** until AWS Config finishes evaluating your resources against the rule. You can update the results with the refresh button. When AWS Config finishes evaluations, you can see the rules and resource types that are compliant or noncompliant. For more information, see Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config.

> **Note**
>
> AWS Config evaluates only the resource types that it is recording. For example, if you add the **cloudtrail-enabled** rule but don't record the CloudTrail trail resource type, AWS Config can't evaluate whether the trails in your account are compliant or noncompliant. For more information, see Recording AWS Resources with AWS Config.

Viewing rules

To view your rules

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the region selector is set to a region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**.
4. The **Rules** page shows all the rule that are currently in your AWS account. It lists the name, associated remediation action, and compliance status of each rule.

   - Choose **Add rule** to get started with creating a rule.
   - Choose a rule to see its settings, or choose a rule and **View details**.
   - See the compliance status of the rule when it evaluates your resources.
   - Choose a rule and **Edit rule** to change the configuration settings of the rule and set a remediation action for a noncompliant rule.

Viewing Rules (AWS SDKs)

Viewing details for your rules

The following code examples show how to use `DescribeConfigRules`.

CLI

AWS CLI

To get details for an AWS Config rule

The following command returns details for an AWS Config rule named `InstanceTypesAreT2micro`:

```
aws configservice describe-config-rules --config-rule-
names InstanceTypesAreT2micro
```

Output:

```
{
    "ConfigRules": [
        {
            "ConfigRuleState": "ACTIVE",
            "Description": "Evaluates whether EC2 instances are the t2.micro
 type.",
            "ConfigRuleName": "InstanceTypesAreT2micro",
            "ConfigRuleArn": "arn:aws:config:us-east-1:123456789012:config-rule/
config-rule-abcdef",
            "Source": {
                "Owner": "CUSTOM_LAMBDA",
                "SourceIdentifier": "arn:aws:lambda:us-
east-1:123456789012:function:InstanceTypeCheck",
                "SourceDetails": [
                    {
                        "EventSource": "aws.config",
                        "MessageType": "ConfigurationItemChangeNotification"
                    }
                ]
            },
            "InputParameters": "{\"desiredInstanceType\":\"t2.micro\"}",
            "Scope": {
                "ComplianceResourceTypes": [
                    "AWS::EC2::Instance"
                ]
            },
            "ConfigRuleId": "config-rule-abcdef"
        }
    ]
}
```

- For API details, see DescribeConfigRules in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample lists config rules for the account, with selected properties.

```
Get-CFGConfigRule | Select-Object ConfigRuleName, ConfigRuleId, ConfigRuleArn,
 ConfigRuleState
```

Output:

```
ConfigRuleName                                      ConfigRuleId
 ConfigRuleArn
 ConfigRuleState
--------------                                      ------------
 -------------
 ---------------
ALB_REDIRECTION_CHECK                               config-rule-12iyn3
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-12iyn3
 ACTIVE
access-keys-rotated                                 config-rule-aospfr
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-aospfr
 ACTIVE
autoscaling-group-elb-healthcheck-required          config-rule-cn1f2x
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-cn1f2x
 ACTIVE
```

- For API details, see DescribeConfigRules in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client
```

```
    def describe_config_rule(self, rule_name):
        """
        Gets data for the specified rule.

        :param rule_name: The name of the rule to retrieve.
        :return: The rule data.
        """
        try:
            response = self.config_client.describe_config_rules(
                ConfigRuleNames=[rule_name]
            )
            rule = response["ConfigRules"]
            logger.info("Got data for rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't get data for rule %s.", rule_name)
            raise
        else:
            return rule
```

- For API details, see DescribeConfigRules in *AWS SDK for Python (Boto3) API Reference*.

Viewing compliance information for your rules

The following code examples show how to use `DescribeComplianceByConfigRule`.

CLI

AWS CLI

To get compliance information for your AWS Config rules

The following command returns compliance information for each AWS Config rule that is violated by one or more AWS resources:

```
aws configservice describe-compliance-by-config-rule --compliance-
types NON_COMPLIANT
```

In the output, the value for each `CappedCount` attribute indicates how many resources do not comply with the related rule. For example, the following output indicates that 3 resources do not comply with the rule named `InstanceTypesAreT2micro`.

Output:

```
{
    "ComplianceByConfigRules": [
        {
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            },
            "ConfigRuleName": "InstanceTypesAreT2micro"
        },
        {
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 10,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            },
            "ConfigRuleName": "RequiredTagsForVolumes"
        }
    ]
}
```

- For API details, see DescribeComplianceByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example retrieves compliances details for the rule ebs-optimized-instance, for which there is no current evaluation results for the rule, hence it returns INSUFFICIENT_DATA

```
(Get-CFGComplianceByConfigRule -ConfigRuleName ebs-optimized-instance).Compliance
```

Output:

```
ComplianceContributorCount ComplianceType
-------------------------- --------------
                           INSUFFICIENT_DATA
```

Example 2: This example returns the number of non-compliant resources for the rule ALB_HTTP_TO_HTTPS_REDIRECTION_CHECK.

```
(Get-CFGComplianceByConfigRule -ConfigRuleName
 ALB_HTTP_TO_HTTPS_REDIRECTION_CHECK -ComplianceType
 NON_COMPLIANT).Compliance.ComplianceContributorCount
```

Output:

```
CapExceeded CappedCount
----------- -----------
False       2
```

- For API details, see DescribeComplianceByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Viewing the compliance summary for your rules

The following code examples show how to use `GetComplianceSummaryByConfigRule`.

CLI

AWS CLI

To get the compliance summary for your AWS Config rules

The following command returns the number of rules that are compliant and the number that are noncompliant:

```
aws configservice get-compliance-summary-by-config-rule
```

In the output, the value for each `CappedCount` attribute indicates how many rules are compliant or noncompliant.

Output:

```
{
    "ComplianceSummary": {
        "NonCompliantResourceCount": {
            "CappedCount": 3,
            "CapExceeded": false
        },
        "ComplianceSummaryTimestamp": 1452204131.493,
        "CompliantResourceCount": {
            "CappedCount": 2,
            "CapExceeded": false
        }
    }
}
```

- For API details, see GetComplianceSummaryByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns the number of Config rules that are non-compliant.

```
Get-CFGComplianceSummaryByConfigRule -Select
 ComplianceSummary.NonCompliantResourceCount
```

Output:

```
CapExceeded CappedCount
----------- -----------
False       9
```

- For API details, see GetComplianceSummaryByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Viewing the evaluation results for your rules

The following code examples show how to use `GetComplianceDetailsByConfigRule`.

CLI

AWS CLI

To get the evaluation results for an AWS Config rule

The following command returns the evaluation results for all of the resources that don't comply with an AWS Config rule named `InstanceTypesAreT2micro`:

```
aws configservice get-compliance-details-by-config-rule --config-rule-
name InstanceTypesAreT2micro --compliance-types NON_COMPLIANT
```

Output:

```
{
    "EvaluationResults": [
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314645.261,
            "ConfigRuleInvokedTime": 1450314642.948,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-2a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314645.18,
```

```
            "ConfigRuleInvokedTime": 1450314642.902,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-3a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314643.346,
            "ConfigRuleInvokedTime": 1450314643.124,
            "ComplianceType": "NON_COMPLIANT"
        }
    ]
}
```

- For API details, see GetComplianceDetailsByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example obtains the evaluation results for the rule access-keys-rotated and returns the output grouped by compliance-type

```
Get-CFGComplianceDetailsByConfigRule -ConfigRuleName access-keys-rotated | Group-
Object ComplianceType
```

Output:

```
Count Name                      Group
----- ----                      -----
    2 COMPLIANT                 {Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationResult}
    5 NON_COMPLIANT             {Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationRes...
```

Example 2: This example queries compliance details for the rule access-keys-rotated for COMPLIANT resources.

```
Get-CFGComplianceDetailsByConfigRule -ConfigRuleName access-
keys-rotated -ComplianceType COMPLIANT | ForEach-Object
 {$_.EvaluationResultIdentifier.EvaluationResultQualifier}
```

Output:

```
ConfigRuleName      ResourceId            ResourceType
--------------      ----------            ------------
access-keys-rotated BCAB1CDJ2LITAPVEW3JAH AWS::IAM::User
access-keys-rotated BCAB1CDJ2LITL3EHREM4Q AWS::IAM::User
```

- For API details, see GetComplianceDetailsByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Turning on Proactive Evaluation for AWS Config Rules

You can use the AWS Config console or the AWS SDKs to turn on proactive evaluation rules. For a list of resource types and managed rules that support proactive evaluation, see Components of a Rule | Evaluation Modes.

Topics

- Turning on Proactive Evaluation (Console)
- Turning on Proactive Evaluation (AWS SDKs)

Turning on Proactive Evaluation (Console)

The **Rules** page shows your rules and their current compliance results in a table. The result for each rule is **Evaluating...** until AWS Config finishes evaluating your resources against the rule. You can update the results with the refresh button.

When AWS Config finishes evaluations, you can see the rules and resource types that are compliant or noncompliant. For more information, see Viewing Compliance Information and Evaluation Results for your AWS Resources with AWS Config.

> **Note**
>
> AWS Config evaluates only the resource types that it is recording. For example, if you add the **cloudtrail-enabled** rule but don't record the CloudTrail trail resource type, AWS Config can't evaluate whether the trails in your account are compliant or noncompliant. For more information, see Recording AWS Resources with AWS Config.

Turning on proactive evaluation

You can use *proactive evaluation* to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.

The Resource type schema states the properties of a resource. You can find the resource type schema in "*AWS public extensions*" within the AWS CloudFormation registry or with the following CLI commmand:

```
aws cloudformation describe-type --type-name "AWS::S3::Bucket" --type RESOURCE
```

For more information, see Managing extensions through the AWS CloudFormation registry and AWS resource and property types reference in the AWS CloudFormation User Guide.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

To turn on proactive evalution

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the Region selector is set to a Region that supports AWS Config rules. For the list of supported AWS Regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.

3. In the left navigation, choose **Rules**. For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.
4. Choose a rule, and then choose **Edit rule** for the rule that you want to update.
5. For **Evaluation mode**, choose **Turn on proactive evaluation** to allow you to run evaluations on the configuration settings of your resources before they are deployed.
6. Choose **Save**.

After you have turned on proactive evaluation, you can use the StartResourceEvaluation API and GetResourceEvaluationSummary API to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region.

For example, start with the StartResourceEvaluation API:

```
aws configservice start-resource-evaluation --evaluation-mode PROACTIVE
                --resource-details '{"ResourceId":"MY_RESOURCE_ID",
                                     "ResourceType":"AWS::RESOURCE::TYPE",

 "ResourceConfiguration":"RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA",

 "ResourceConfigurationSchemaType":"CFN_RESOURCE_SCHEMA"}'
```

You should receive the `ResourceEvaluationId` in the output:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID"
}
```

Then, use the `ResourceEvaluationId` with the GetResourceEvaluationSummary API to check the evaluation result:

```
aws configservice get-resource-evaluation-summary
    --resource-evaluation-id MY_RESOURCE_EVALUATION_ID
```

You should receive output similiar to the following:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID",
    "EvaluationMode": "PROACTIVE",
```

```
    "EvaluationStatus": {
        "Status": "SUCCEEDED"
    },
    "EvaluationStartTimestamp": "2022-11-15T19:13:46.029000+00:00",
    "Compliance": "COMPLIANT",
    "ResourceDetails": {
        "ResourceId": "MY_RESOURCE_ID",
        "ResourceType": "AWS::RESOURCE::TYPE",
        "ResourceConfiguration":
 "RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA"
    }
}
```

To see additional information about the evaluation result, such as which rule flagged a resource as NON_COMPLIANT, use the GetComplianceDetailsByResource API.

Turning on Proactive Evaluation (AWS SDKs)

Turning on proactive evaluation (AWS CLI)

You can use *proactive evaluation* to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.

The Resource type schema states the properties of a resource. You can find the resource type schema in "*AWS public extensions*" within the AWS CloudFormation registry or with the following CLI commmand:

```
aws cloudformation describe-type --type-name "AWS::S3::Bucket" --type RESOURCE
```

For more information, see Managing extensions through the AWS CloudFormation registry and AWS resource and property types reference in the AWS CloudFormation User Guide.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

To turn on proactive evaluation

Use the `put-config-rule` command and enable `PROACTIVE` for `EvaluationModes`.

After you have turned on proactive evaluation, you can use the start-resource-evaluation CLI command and get-resource-evaluation-summary CLI command to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region.

For example, start with the **start-resource-evaluation** command:

```
aws configservice start-resource-evaluation --evaluation-mode PROACTIVE
                --resource-details '{"ResourceId":"MY_RESOURCE_ID",
                                     "ResourceType":"AWS::RESOURCE::TYPE",

 "ResourceConfiguration":"RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA",

 "ResourceConfigurationSchemaType":"CFN_RESOURCE_SCHEMA"}'
```

You should receive the `ResourceEvaluationId` in the output:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID"
}
```

Then, use the `ResourceEvaluationId` with the **get-resource-evaluation-summary** to check the evaluation result:

```
aws configservice get-resource-evaluation-summary
    --resource-evaluation-id MY_RESOURCE_EVALUATION_ID
```

You should receive output similiar to the following:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID",
    "EvaluationMode": "PROACTIVE",
    "EvaluationStatus": {
        "Status": "SUCCEEDED"
    },
    "EvaluationStartTimestamp": "2022-11-15T19:13:46.029000+00:00",
    "Compliance": "COMPLIANT",
    "ResourceDetails": {
        "ResourceId": "MY_RESOURCE_ID",
```

```
        "ResourceType": "AWS::RESOURCE::TYPE",
        "ResourceConfiguration":
 "RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA"
    }
}
```

To see additional information about the evaluation result, such as which rule flagged a resource as NON_COMPLIANT, use the get-compliance-details-by-resource CLI command.

> **Note**
>
> For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.

Turning on proactive evaluation (API)

You can use *proactive evaluation* to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.

The Resource type schema states the properties of a resource. You can find the resource type schema in "*AWS public extensions*" within the AWS CloudFormation registry or with the following CLI commmand:

```
aws cloudformation describe-type --type-name "AWS::S3::Bucket" --type RESOURCE
```

For more information, see Managing extensions through the AWS CloudFormation registry and AWS resource and property types reference in the AWS CloudFormation User Guide.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

To turn on proactive evaluation for a rule

Use the PutConfigRule action and enable `PROACTIVE` for `EvaluationModes`.

After you have turned on proactive evaluation, you can use the StartResourceEvaluation API and GetResourceEvaluationSummary API to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region. For example, start with the StartResourceEvaluation API:

```
aws configservice start-resource-evaluation --evaluation-mode PROACTIVE
                --resource-details '{"ResourceId":"MY_RESOURCE_ID",
                                     "ResourceType":"AWS::RESOURCE::TYPE",

 "ResourceConfiguration":"RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA",

 "ResourceConfigurationSchemaType":"CFN_RESOURCE_SCHEMA"}'
```

You should receive the `ResourceEvaluationId` in the output:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID"
}
```

Then, use the `ResourceEvaluationId` with the GetResourceEvaluationSummary API to check the evaluation result:

```
aws configservice get-resource-evaluation-summary
    --resource-evaluation-id MY_RESOURCE_EVALUATION_ID
```

You should receive output similiar to the following:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID",
    "EvaluationMode": "PROACTIVE",
    "EvaluationStatus": {
        "Status": "SUCCEEDED"
    },
    "EvaluationStartTimestamp": "2022-11-15T19:13:46.029000+00:00",
    "Compliance": "COMPLIANT",
    "ResourceDetails": {
        "ResourceId": "MY_RESOURCE_ID",
        "ResourceType": "AWS::RESOURCE::TYPE",
        "ResourceConfiguration":
 "RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA"
```

```
    }
}
```

To see additional information about the evaluation result, such as which rule flagged a resource as NON_COMPLIANT, use the GetComplianceDetailsByResource API.

> **Note**
>
> For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.

Sending Rule Evaluations to Security Hub

After adding an AWS Config rule, you can also send rule evaluations to AWS Security Hub. The integration between AWS Config and Security Hub allows you to triage and remediate rule evaluations alongside other misconfigurations and security issues.

Send Rule Evaluations to Security Hub

To send rule evaluations to Security Hub, you must first set up AWS Security Hub and AWS Config, and then add at least one AWS Config managed or custom rule. After this, AWS Config immediately starts sending rule evaluations to Security Hub. Security Hub enriches the rule evaluations and transforms them into Security Hub findings.

For more information about this integration, see Available AWS Service Integrations in the AWS Security Hub User Guide.

Evaluating Your Resources with AWS Config Rules

When you create custom rules or use managed rules, AWS Config evaluates your resources against those rules. You can run on-demand evaluations for resources against your rules. For example, this is helpful when you create a custom rule and want to check that AWS Config is correctly evaluating your resources or to identify if there is an issue with the evaluation logic of your AWS Lambda function.

Example

1. You create a custom rule that evaluates whether your IAM users have active access keys.

2. AWS Config evaluates your resources against your custom rule.
3. An IAM user who doesn't have an active access key exists in your account. Your rule doesn't correctly flag this resource as NON_COMPLIANT.
4. You fix the rule and start the evaluation again.
5. Because you fixed your rule, the rule correctly evaluates your resources, and flags the IAM user resource as NON_COMPLIANT.

When you add a rule to your account, you can specify when in the resource creation and management process that you want AWS Config to evaluate your resources. The resource creation and management process is known as resource provisioning. You choose the *evaluation mode* to specify when in this process you want AWS Config to evaluate your resources.

Depending on the rule, AWS Config can evaluate your resource configurations before a resource has been deployed, after a resource has been deployed, or both. Evaluating a resource before it has been deployed is **proactive evaluation**. Evaluating a resource after it has been deployed is **detective evaluation**.

Proactive mode

Use proactive evaluation to evaluate resources before they have been deployed. This allows you to evaluate whether a set of resource properties, if used to define an AWS resource, would be COMPLIANT or NON_COMPLIANT given the set of proactive rules that you have in your account in your Region.

The Resource type schema states the properties of a resource. You can find the resource type schema in "*AWS public extensions*" within the AWS CloudFormation registry or with the following CLI commmand:

```
aws cloudformation describe-type --type-name "AWS::S3::Bucket" --type RESOURCE
```

For more information, see Managing extensions through the AWS CloudFormation registry and AWS resource and property types reference in the AWS CloudFormation User Guide.

> **Note**
>
> Proactive rules do not remediate resources that are flagged as NON_COMPLIANT or prevent them from being deployed.

Evaluating your Resources

To turn on proactive evalution

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the Region selector is set to a Region that supports AWS Config rules. For the list of supported AWS Regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the left navigation, choose **Rules**. For a list of managed rules that support proactive evaluation, see List of AWS Config Managed Rules by Evaluation Mode.
4. Choose a rule, and then choose **Edit rule** for the rule that you want to update.
5. For **Evaluation mode**, choose **Turn on proactive evaluation** to allow you to run evaluations on the configuration settings of your resources before they are deployed.
6. Choose **Save**.

> **Note**
>
> You can also turn on proactive evaluation using the `put-config-rule` command and enabling `PROACTIVE` for `EvaluationModes` or using the PutConfigRule action and enabling `PROACTIVE` for `EvaluationModes`.

After you have turned on proactive evaluation, you can use the StartResourceEvaluation API and GetResourceEvaluationSummary API to check if the resources you specify in these commands would be flagged as NON_COMPLIANT by the proactive rules in your account in your Region.

For example, start with the StartResourceEvaluation API:

```
aws configservice start-resource-evaluation --evaluation-mode PROACTIVE
                --resource-details '{"ResourceId":"MY_RESOURCE_ID",
                                     "ResourceType":"AWS::RESOURCE::TYPE",

 "ResourceConfiguration":"RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA",

 "ResourceConfigurationSchemaType":"CFN_RESOURCE_SCHEMA"}'
```

You should receive the `ResourceEvaluationId` in the output:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID"
}
```

Then, use the `ResourceEvaluationId` with the GetResourceEvaluationSummary API to check the evaluation result:

```
aws configservice get-resource-evaluation-summary
    --resource-evaluation-id MY_RESOURCE_EVALUATION_ID
```

You should receive output similiar to the following:

```
{
    "ResourceEvaluationId": "MY_RESOURCE_EVALUATION_ID",
    "EvaluationMode": "PROACTIVE",
    "EvaluationStatus": {
        "Status": "SUCCEEDED"
    },
    "EvaluationStartTimestamp": "2022-11-15T19:13:46.029000+00:00",
    "Compliance": "COMPLIANT",
    "ResourceDetails": {
        "ResourceId": "MY_RESOURCE_ID",
        "ResourceType": "AWS::RESOURCE::TYPE",
        "ResourceConfiguration":
 "RESOURCE_DEFINITION_AS_PER_THE_RESOURCE_CONFIGURATION_SCHEMA"
    }
}
```

To see additional information about the evaluation result, such as which rule flagged a resource as NON_COMPLIANT, use the GetComplianceDetailsByResource API.

Detective mode

Use detective evaluation to evaluate resources that have already been deployed. This allows you to evaluate the configuration settings of your existing resources.

Evaluating your Resources (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.

2. In the AWS Management Console menu, check that the region selector is set to a Region that supports AWS Config rules. For the list of supported regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the navigation pane, choose **Rules**. The **Rules** page shows the name, associated remediation action, and compliance status of each rule.
4. Choose a rule from the table.
5. From the **Actions** dropdown list, choose **Re-evaluate**.
6. AWS Config starts evaluating the resources against your rule.

> **Note**
>
> You can re-evaluate a rule one time each minute. You must wait for AWS Config to complete the evaluation for your rule before you start another evaluation. You can't run an evaluation if at the same time the rule is being updated or if the rule is being deleted.

Evaluating your Resources (CLI)

- Use the **start-config-rules-evaluation** command:

```
$ aws configservice start-config-rules-evaluation --config-rule-
names ConfigRuleName
```

AWS Config starts evaluating the recorded resource configurations against your rule. You can also specify multiple rules in your request:

```
$ aws configservice start-config-rules-evaluation --config-rule-
names ConfigRuleName1 ConfigRuleName2 ConfigRuleName3
```

Evaluating your Resources (API)

Use the StartConfigRulesEvaluation action.

Deleting Evaluation Results from AWS Config Rules

After AWS Config evaluates your rule, you can see the evaluation results on the **Rules** page or the **Rules details** page for the rule. If the evaluation results are incorrect or if you want to evaluate again, you can delete the current evaluation results for the rule. For example, if your rule was incorrectly evaluating your resources or you recently deleted resources from your account, you can delete the evaluation results and then run a new evaluation.

Deleting Evaluation Results (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. In the AWS Management Console menu, verify that the Region selector is set to an AWS Region that supports AWS Config rules. For the list of supported Regions, see AWS Config Regions and Endpoints in the *Amazon Web Services General Reference*.
3. In the navigation pane, choose **Rules**. The **Rules** page shows the name, associated remediation action, and compliance status of each rule.
4. Choose a rule from the table.
5. From the **Actions** dropdown list, choose **Delete results**.
6. When prompted, type **Delete** (this entry is case sensitive), and then choose **Delete**. After you delete an evaluation, you cannot retrieve it.
7. After the evaluation results are deleted, you can manually start a new evaluation.

Deleting Evaluation Results (CLI)

- Use the **delete-evaluation-results** command.

  ```
  $ aws configservice delete-evaluation-results --config-rule-name ConfigRuleName
  ```

  AWS Config deletes the evaluation results for the rule.

Deleting Evaluation Results (API)

Use the DeleteEvaluationResults action.

Troubleshooting for AWS Config rules

Check the following issues to troubleshoot if you cannot delete an AWS Config rule or receive an error similair to the following: "An error has occurred with AWS Config."

The AWS Identity and Access Management (IAM) entity has permissions for the DeleteConfigRule API

1. Open the IAM console at https://console.aws.amazon.com/iam/.
2. In the navigation pane choose **Users** or **Roles**.
3. Choose the user or role that you used to delete the AWS Config rule, and expand **Permissions policies**.
4. In the **Permissions** tab, choose **JSON**.
5. In the JSON preview pane, confirm that the IAM policy allows permissions for the DeleteConfigRule API.

The IAM entity permission boundary allows the DeleteConfigRule API

If the IAM entity has a permissions boundary, be sure that it allows permissions for the the DeleteConfigRule API.

1. Open the IAM console at https://console.aws.amazon.com/iam/.
2. In the navigation pane choose **Users** or **Roles**.
3. Choose the user or role that you used to delete the AWS Config rule, expand **Permissions boundary**, and then choose **JSON**.
4. In the JSON preview pane, confirm that the IAM policy allows permissions for the DeleteConfigRule API.

> **Warning**
>
> IAM users have long-term credentials, which presents a security risk. To help mitigate this risk, we recommend that you provide these users with only the permissions they require to perform the task and that you remove these users when they are no longer needed.

The service control policy (SCP) allows the DeleteConfigRule API

1. Open the AWS Organizations console at https://console.aws.amazon.com/organizations/ using the management account for the organization.
2. In Account name, choose the AWS account.
3. In **Policies**, expand **Service control policies** and note the SCP policies that are attached.
4. At the top of the page, choose **Policies**.
5. Select the policy, and then choose **View details**.
6. In the JSON preview pane, confirm that the policy allows the DeleteConfigRule API.

The rule is not a service-linked rule

When you enable a security standard, AWS Security Hub creates service-linked rules for you. You can't delete these service-linked rules using AWS Config, and the delete button is grayed out. To remove a service-linked rule, see Disabling a security standard in the *Security Hub User Guide*.

No remediation actions are in progress

You cannot delete AWS Config rules that have remediation actions in progress. Follow the steps to delete the remediation action that is associated with that rule. Then, try deleting the rule again.

> **Important**
>
> Only delete remediation actions that are in **failed** or **successful** states.

Conformance Packs for AWS Config

A conformance pack is a collection of AWS Config rules and remediation actions that can be easily deployed as a single entity in an account and a Region or across an organization in AWS Organizations.

Conformance packs are created by authoring a YAML template that contains the list of AWS Config managed or custom rules and remediation actions. You can also use AWS Systems Manager documents (SSM documents) to store your conformance pack templates on AWS and directly deploy conformance packs using SSM document names. You can deploy the template by using the AWS Config console or the AWS CLI.

To quickly get started and to evaluate your AWS environment, use one of the sample conformance pack templates. You can also create a conformance pack YAML file from scratch based on Custom Conformance Pack.

Topics

- Viewing Compliance Data in the Conformance Packs Dashboard for AWS Config
- Prerequisite for Conformance Packs for AWS Config
- Region Support
- AWS Config Process Checks Within a Conformance Pack for AWS Config
- Conformance Pack Sample Templates for AWS Config
- Creating templates for Custom Conformance Packs for AWS Config
- Deploying Conformance Packs for AWS Config
- Editing Conformance Packs for AWS Config
- Deleting Conformance Packs for AWS Config
- Viewing Details and Compliance Information for your Conformance Packs for AWS Config
- Viewing the Compliance History Timeline for Conformance Packs for AWS Config
- Querying Compliance History for Conformance Packs for AWS Config
- Managing Conformance Packs for AWS Config Across all Accounts in Your Organization
- Troubleshooting for Conformance Packs for AWS Config

Viewing Compliance Data in the Conformance Packs Dashboard for AWS Config

The main page for **Conformance Packs** displays all of the conformance packs that you currently have in your AWS account. The page also contains the name, deployment status, and compliance score of each conformance pack. A compliance score is the percentage of the number of compliant rule-resource combinations in a conformance pack compared to the number of total possible rule-resource combinations in the conformance pack.

You can use this dashboard to understand the level of compliance of your conformance packs and use the compliance score to track remediation progress, perform comparisons across different sets of requirements, and see the impact a specific change or deployment has on a conformance pack.

Navigating the Conformance Packs Main Page

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Conformance packs** page. Review your conformance packs and their compliance score. You can also do the following:

   - To add and configure a new conformance pack, choose **Deploy conformance pack**.
   - To delete a conformance pack and its data, change the configuration settings, or view additional details, such as the delivery location or parameters, choose a conformance pack and choose **Actions**.

     > **Note**
     >
     > You cannot edit a deployed conformance pack. You can modify the other selections at any time by choosing the name of the conformance pack and **Edit** in the **Actions** dropdown.

   - To view the history of compliance state changes, choose a conformance pack and choose **Conformance pack timeline**. For more information, see Viewing the Compliance History Timeline for Conformance Packs.
   - To view the deployment status, compliance score, compliance score timeline, and rules for a conformance pack in a detailed view, choose a conformance pack and choose **View**.

Prerequisite for Conformance Packs for AWS Config

Before you deploy your conformance pack, turn on AWS Config recording.

Topics

- Step 1: Start AWS Config Recording (Required for all conformance packs)
- Step 2: Additional Prerequisites by Conformance Pack Type

Step 1: Start AWS Config Recording (Required for all conformance packs)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.
3. To start recording, under **Recording is off**, choose **Turn on**. When prompted, choose **Continue**.

Step 2: Additional Prerequisites by Conformance Pack Type

A. Prerequisites for Using a Conformance Pack With Remediation

Before deploying conformance packs using sample templates with remediation, you must create appropriate resources such as automation assume role and other AWS resources based on your remediation target.

If you have an existing automation role that you are using for remediation using SSM documents, you can directly provide the ARN of that role. If you have any resources you can provide those in the template.

> **Note**
>
> When deploying a conformance pack with remediation to an organization, the management account ID of the organization needs to be specified. Otherwise, during deployment of the organizational conformance pack AWS Config replaces the management account ID with the member account ID automatically.

AWS Config does not support AWS CloudFormation intrinsic functions for the automation execution role or the `ConfigRuleName`. You must provide the exact ARN of the role as a string, and you must use the complete rule name without intrinsic functions.

For more information about how to pass the exact ARN, see Conformance Pack Sample Templates for AWS Config. While using example templates, update your Account ID and management account ID for organization.

B. Prerequisites for Using a Conformance Pack With One or More Custom AWS Config Rules

Before deploying a conformance pack with one or more custom AWS Config rules, create appropriate resources such as AWS Lambda function and the corresponding execution role.

If you have an existing custom AWS Config rule, you can directly provide the `ARN` of AWS Lambda function to create another instance of that custom rule as part of the pack.

If you do not have an existing custom AWS Config rule, you can create a AWS Lambda function and use the ARN of the Lambda function. For more information, see AWS Config Custom Rules.

If your AWS Lambda function is present in a different AWS account, you can create AWS Config rules with appropriate cross-account AWS Lambda function authorization. For more information, see How to Centrally Manage AWS Config Rules across Multiple AWS accounts blog post.

Same account bucket policy

For AWS Config to be able to store conformance pack artifacts, you will need to provide an Amazon S3 bucket and add the following permissions. For more information on naming your bucket, see Bucket naming rules.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AWSConfigConformsBucketPermissionsCheck",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
            "arn:aws:iam::AccountId:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
        ]
      },
```

```
      "Action": "s3:GetBucketAcl",
      "Resource": "arn:aws:s3:::delivery-bucket-name"
    },
    {
      "Sid": "AWSConfigConformsBucketDelivery",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
            "arn:aws:iam::AccountId:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
        ]
      },
      "Action": "s3:PutObject",
      "Resource": "arn:aws:s3:::delivery-bucket-name/[optional] prefix/
AWSLogs/AccountId/Config/*",
      "Condition": {
        "StringEquals": {
          "s3:x-amz-acl": "bucket-owner-full-control"
        }
      }
    }
  ]
}
```

Cross-account bucket policy

For AWS Config to be able to store conformance pack artifacts, you will need to provide an Amazon S3 bucket and add the following permissions. For more information on naming your bucket, see Bucket naming rules.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AWSConfigConformsBucketPermissionsCheck",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
            "arn:aws:iam::SourceAccountId:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms",
            "PutConformancePack API caller user principal like
 arn:aws:iam::SourceAccountId:user/userName "
```

```
        ]
      },
      "Action": "s3:GetBucketAcl",
      "Resource": "arn:aws:s3:::awsconfigconforms-suffix in bucket name"
    },
    {
      "Sid": "AWSConfigConformsBucketDelivery",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
            "arn:aws:iam::SourceAccountId:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
        ]
      },
      "Action": "s3:PutObject",
      "Resource": "arn:aws:s3:::awsconfigconforms-suffix in bucket name/[optional]
 prefix/AWSLogs/AccountID/Config/*",
      "Condition": {
        "StringEquals": {
          "s3:x-amz-acl": "bucket-owner-full-control"
        }
      }
    },
    {
      "Sid": " AWSConfigConformsBucketReadAccess",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
            "arn:aws:iam::SourceAccountId:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
        ]
      },
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::awsconfigconforms-suffix in bucket name/[optional]
 prefix/AWSLogs/AccountID/Config/*"
    }
  ]
}
```

> **Note**
>
> When deploying cross-account conformance packs, the name of the delivery Amazon S3 bucket should start with `awsconfigconforms`.

C. Prerequisites for Organization Conformance Packs

Specify an automation execution role ARN for that remediation in the template if the input template has an autoremediation configuration. Ensure a role with the specified name exists in all the accounts (management and member) of an organization. You must create this role in all accounts before calling `PutOrganizationConformancePack`. You can create this role manually or using the AWS CloudFormation stack-sets to create this role in every account.

If your template uses AWS CloudFormation intrinsic function `Fn::ImportValue` to import a particular variable, then that variable must be defined as an `Export Value` in all the member accounts of that organization.

For custom AWS Config rule, see How to Centrally Manage AWS Config Rules across Multiple AWS accounts blog to setup proper permissions.

Organization bucket policy:

For AWS Config to be able to store conformance pack artifacts, you will need to provide an Amazon S3 bucket and add the following permissions. For more information on naming your bucket, see Bucket naming rules.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "AllowGetObject",
            "Effect": "Allow",
            "Principal": "*",
            "Action": [
                 "s3:GetObject",
                 "s3:PutObject"
            ],
            "Resource": "arn:aws:s3:::awsconfigconforms-suffix in bucket name/*",
            "Condition": {
```

```
                "StringEquals": {
                    "aws:PrincipalOrgID": "customer_org_id"
                },
                "ArnLike": {
                    "aws:PrincipalArn": "arn:aws:iam::*:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
                }
            }
        },
        {
            "Sid": "AllowGetBucketAcl",
            "Effect": "Allow",
            "Principal": "*",
            "Action": "s3:GetBucketAcl",
            "Resource": "arn:aws:s3:::awsconfigconforms-suffix in bucket name",
            "Condition": {
                "StringEquals": {
                    "aws:PrincipalOrgID": "customer_org_id"
                },
                "ArnLike": {
                    "aws:PrincipalArn": "arn:aws:iam::*:role/aws-service-role/config-
conforms.amazonaws.com/AWSServiceRoleForConfigConforms"
                }
            }
        }
    ]
}
```

> **Note**
>
> When deploying conformance packs to an organization, the name of the delivery Amazon S3 bucket should start with `awsconfigconforms`.

Region Support

Conformance packs are supported in the following Regions.

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS
Asia Pacific	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
(Melbourne)			
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol	
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS	

Deploying conformance packs across member accounts in an AWS Organization is supported in the following Regions.

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS	
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS	
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS	
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

AWS Config Process Checks Within a Conformance Pack for AWS Config

Process checks is a type of AWS Config rule that allows you to track your external and internal tasks that require verification as part of the conformance packs. These checks can be added to an existing conformance pack or a new conformance pack. You can track all compliance that includes AWS Configurations and manual checks in a single location.

With process checks, you can list the compliance of requirements and actions at a single location. These process checks help increase the coverage of compliance regimes-based conformance packs. You can further expand the conformance pack by adding new process checks that track processes and actions needing manual verification and tracking. This enables conformance pack to become the template that provides details about AWS Configurations and manual processes for a compliance regime.

You can track and manage the compliance of processes not associated with resource configuration changes within a conformance packs as process checks. For example, you can add a process check to track the PCI-DSS compliance requirement to store media backup at an offsite location. You will manually evaluate the compliance of this according to PCI-DSS guidelines, or according to your organization's guidance.

Region availability: Process checks with the conformance packs are available in all AWS Regions where AWS Config conformance packs are available. For more information, see Region Support.

Topics

- Sample Conformance Pack Template for Creating Process Checks
- Include Process Checks Within a Conformance Pack
- Change Compliance Status of a Process Check
- View and Edit the Process Check (Console)

Sample Conformance Pack Template for Creating Process Checks

```
################################################################################
#
#  Conformance Pack template for process check
#
```

```
##############################################################################
Resources:
  AWSConfigProcessCheck:
    Properties:
      ConfigRuleName: RuleName
      Description: Description of Rule
      Source:
        Owner: AWS
        SourceIdentifier: AWS_CONFIG_PROCESS_CHECK
    Type: AWS::Config::ConfigRule
```

See two sample templates, the Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1 template and the Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2 template.

Include Process Checks Within a Conformance Pack

1. Add a process check in the conformance pack template. Refer to Sample Conformance Pack Template for Creating Process Checks.

   ```
   Resources:
     ConfigEnabledAllRegions:
       Properties:
         ConfigRuleName: Config-Enabled-All-Regions
         Description: Ensure AWS Config is enabled in all Regions.
         Source:
           Owner: AWS
           SourceIdentifier: AWS_CONFIG_PROCESS_CHECK
       Type: AWS::Config::ConfigRule
   ```

2. Enter the name for the process check.
3. Enter the description for the process check.
4. Deploy the conformance pack. For more information, see Deploying Conformance Packs for AWS Config.

Change Compliance Status of a Process Check

You can change the compliance status of a process check using the AWS Config console, the AWS CLI, and APIs.

Change Compliance Status for Process Checks (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the AWS Config Rules page.
3. Choose the name of the process check that you specified in the template along with the identifier in the conformance pack.

   > **Note**
   >
   > All the process checks from the same conformance pack have the same suffix.

4. On the Rule details page, you cannot edit the rule but you can edit the compliance of the rule. In the Manual compliance section, choose **Edit compliance**.
5. Choose the appropriate compliance from the dropdown list.
6. (Optional) Enter a description for the compliance status.
7. Choose **Save**.

Change the Compliance Status for Process Checks (AWS CLI)

You can update the compliance of process checks within a conformance pack using the AWS Command Line Interface (AWS CLI).

To install the AWS CLI on your local machine, see Installing the AWS CLI in the *AWS CLI User Guide*.

If necessary, type `AWS Configure` to configure the AWS CLI to use an AWS Region where AWS Config conformance packs are available.

1. Open a command prompt or a terminal window.
2. Enter the following command to update the compliance of a process check where `ComplianceResourceId` is your `Account ID`, and include the name of your rule.

```
aws configservice put-external-evaluation --config-rule-
name process-check-rule-name  --external-evaluation
 ComplianceResourceType=AWS::::Account,ComplianceResourceId=Account
 ID,ComplianceType=NON_COMPLIANT,OrderingTimestamp=2020-12-17T00:10:00.000Z
```

3. Press Enter to run the command.

Change the Compliance Status for Process Checks (API)

After the deployment is complete, to update the evaluations and compliance of the process checks, use the `PutExternalEvaluation` API. For more information, see PutExternalEvaluation.

View and Edit the Process Check (Console)

You can view process checks only after a compliance state has been added to process checks. Choose the specific conformance pack to view all the process checks within that conformance pack. Here you can see a list of process checks that are in compliant and noncompliant status.

Because this is a service linked rule, you cannot edit the process check through the Rule details page.

> **Note**
>
> However, you can update the compliance of the process check by choosing **Edit Compliance** and selecting the appropriate value from Compliant, noncompliant or not applicable.

You can edit or delete a process check from the conformance pack where you added the process checks.

Conformance Pack Sample Templates for AWS Config

Here are the conformance pack YAML templates that you see in AWS Config console. Within each conformance pack template, you can use one or more AWS Config rules and remediation actions. The AWS Config rules listed within the conformance pack can be AWS Config managed rules and/or AWS Config custom rules. You can download all the conformance pack templates from GitHub.

> **Important**
>
> Conformance packs provide a general-purpose compliance framework to help you create security, operational or cost-optimization governance checks using managed or custom

AWS Config rules and AWS Config remediation actions. AWS conformance pack sample templates intend to help you create your own conformance packs with different or additional rules, input parameters and remediation actions that suit your environment. The sample templates, including those related to compliance standards and industry benchmarks, are not designed to ensure your compliance with a specific governance standard. They can neither replace your internal efforts nor guarantee that you will pass a compliance assessment.

Note

It is recommended that you review the rules available in the region where you deploy a conformance pack (List of AWS Config Managed Rules by Region Availability) and amend the template for rules not yet available in that region before deploying.

Topics

- AWS Control Tower Detective Guardrails Conformance Pack
- Operational Best Practices for ABS CCIG 2.0 Material Workloads
- Operational Best Practices for ABS CCIG 2.0 Standard Workloads
- Operational Best Practices for ACSC Essential 8
- Operational Best Practices for ACSC ISM
- Operational Best Practices for AI and ML
- Operational Best Practices for Amazon API Gateway
- Operational Best Practices for Amazon CloudWatch
- Operational Best Practices for Amazon DynamoDB
- Operational Best Practices for Amazon S3
- Operational Best Practices for APRA CPG 234
- Operational Best Practices for Asset Management
- Operational Best Practices for AWS Backup
- Operational Best Practices for AWS Identity And Access Management
- Operational Best Practices for AWS Well-Architected Framework Reliability Pillar
- Operational Best Practices for AWS Well-Architected Framework Security Pillar

- Operational Best Practices for BCP and DR
- Operational Best Practices for BNM RMiT
- Operational Best Practices for Canadian Centre for Cyber Security (CCCS) Medium Cloud Control Profile
- Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1
- Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2
- Operational Best Practices for CIS Critical Security Controls v8 IG1
- Operational Best Practices for CIS Critical Security Controls v8 IG2
- Operational Best Practices for CIS Critical Security Controls v8 IG3
- Operational Best Practices for CIS Top 20
- Operational Best Practices for CISA Cyber Essentials
- Operational Best Practices for Criminal Justice Information Services (CJIS)
- Operational Best Practices for CMMC 2.0 Level 1
- Operational Best Practices for CMMC 2.0 Level 2
- Operational Best Practices for Compute Services
- Operational Best Practices for Data Resiliency
- Operational Best Practices for Databases Services
- Operational Best Practices for Data Lakes and Analytics Services
- Operational Best Practices for DevOps
- Operational Best Practices for EC2
- Operational Best Practices for Encryption and Key Management
- Operational Best Practices for ENISA Cybersecurity guide for SMEs
- Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low
- Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium
- Operational Best Practices for Esquema Nacional de Seguridad (ENS) High
- Operational Best Practices for FDA Title 21 CFR Part 11
- Operational Best Practices for FedRAMP(Low)
- Operational Best Practices for FedRAMP(Moderate)
- Operational Best Practices for FedRAMP (High Part 1)
- Operational Best Practices for FedRAMP (High Part 2)

- Operational Best Practices for FFIEC
- Operational Best Practices for Germany Cloud Computing Compliance Criteria Catalog (C5)
- Operational Best Practices for Gramm Leach Bliley Act (GLBA)
- Operational Best Practices for GxP EU Annex 11
- Operational Best Practices for HIPAA Security
- Operational Best Practices for IRS 1075
- Operational Best Practices for K-ISMS
- Operational Best Practices for Load Balancing
- Operational Best Practices for Logging
- Operational Best Practices for Management and Governance Services
- Operational Best Practices for MAS Notice 655
- Operational Best Practices for MAS TRMG
- Operational Best Practices for Monitoring
- Operational Best Practices for NBC TRMG
- Operational Best Practices for NERC CIP BCSI
- Operational Best Practices for NCSC Cloud Security Principles
- Operational Best Practices for NCSC Cyber Assesment Framework
- Operational Best Practices for Networking and Content Delivery Services
- Operational Best Practices for NIST 800-53 rev 4
- Operational Best Practices for NIST 800-53 rev 5
- Operational Best Practices for NIST 800 171
- Operational Best Practices for NIST 800 172
- Operational Best Practices for NIST 800 181
- Operational Best Practices for NIST 1800 25
- Operational Best Practices for NIST CSF
- Operational Best Practices for NIST Privacy Framework v1.0
- Operational Best Practices for NYDFS 23
- Operational Best Practices for NZISM 3.8
- Operational Best Practices for PCI DSS 3.2.1
- Operational Best Practices for PCI DSS 4.0 (Excluding global resource types)

- Operational Best Practices for PCI DSS 4.0 (Including global resource types)
- Operational Best Practices for Publicly Accessible Resources
- Operational Best Practices for RBI Cyber Security Framework for UCBs
- Operational Best Practices for RBI MD-ITF
- Operational Best Practices for Security, Identity, and Compliance Services
- Operational Best Practices for Serverless
- Operational Best Practices for Storage Services
- Operational Best Practices for SWIFT CSP
- Security Best Practices for Amazon Elastic Container Service (Amazon ECS)
- Security Best Practices for Amazon Elastic File System (Amazon EFS)
- Security Best Practices for Amazon Elastic Kubernetes Service (Amazon EKS)
- Security Best Practices for Amazon CloudFront
- Security Best Practices for Amazon OpenSearch Service
- Security Best Practices for Amazon Redshift
- Security Best Practices for Amazon Relational Database Service (Amazon RDS)
- Security Best Practices for AWS Auto Scaling
- Security Best Practices for AWS CloudTrail
- Security Best Practices for AWS CodeBuild
- Security Best Practices for Amazon ECR
- Security Best Practices for AWS Lambda
- Security Best Practices for AWS Network Firewall
- Security Best Practices for Amazon SageMaker AI
- Security Best Practices for AWS Secrets Manager
- Security Best Practices for AWS WAF
- Example Templates with Remediation Action

AWS Control Tower Detective Guardrails Conformance Pack

This conformance pack contains AWS Config rules based on AWS Control Tower Detective Guardrails. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: AWS Control Tower Detective Guardrails Conformance Pack.

Operational Best Practices for ABS CCIG 2.0 Material Workloads

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the ABS Cloud Computing Implementation Guide 2.0 - Material Workloads and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more ABS Cloud Computing Implementation Guide controls. An ABS Cloud Computing Implementation Guide control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4a-govern-the-cloud-2-material-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate

Control ID	AWS Config Rule	Guidance
		s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4a-govern-the-cloud-2-standard-workloads	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
section4a-govern-the-cloud-2-standard-workloads	cloudtrail-s3-dataevents-en abled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4a-govern-the-cloud-2-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4a-govern-the-cloud-2-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applicati ons within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4a-govern-the-cloud-2-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-3-material-workloads	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
section4a-govern-the-cloud-3-material-workloads	lambda-concurrency-check	This rule ensures that a Lambda function's concurren cy high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-3-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4a-govern-the-cloud-3-standard-workloads	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-3-standard-workloads	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
section4a-govern-the-cloud-3-standard-workloads	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
section4a-govern-the-cloud-3-standard-workloads	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-1-standard-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
section4b-design-and-secure-the-cloud-1-standard-workloads	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.
section4b-design-and-secure-the-cloud-1-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-1-standard-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-1-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
section4b-design-and-secure-the-cloud-1-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-1-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-1-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
section4b-design-and-secure-the-cloud-1-standard-workloads	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
section4b-design-and-secure-the-cloud-1-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-2-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
section4b-design-and-secure-the-cloud-2-standard-workloads	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-material-workloads	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
section4b-design-and-secure-the-cloud-3-material-workloads	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-material-workloads	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
section4b-design-and-secure-the-cloud-3-material-workloads	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-material-workloads	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-material-workloads	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-material-workloads	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
section4b-design-and-secure-the-cloud-3-standard-workloads	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
section4b-design-and-secure-the-cloud-3-standard-workloads	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
section4b-design-and-secure-the-cloud-3-standard-workloads	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
section4b-design-and-secure-the-cloud-4-material-workloads	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
section4b-design-and-secure-the-cloud-4-material-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-4-material-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-4-material-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-4-material-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-4-material-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
section4b-design-and-secure-the-cloud-4-material-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-4-material-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-4-material-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-material-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-4-material-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
section4b-design-and-secure-the-cloud-4-material-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-material-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-4-standard-workloads	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
section4b-design-and-secure-the-cloud-4-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
section4b-design-and-secure-the-cloud-4-standard-workloads	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.
section4b-design-and-secure-the-cloud-4-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-4-standard-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-4-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-4-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-4-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-4-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-4-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
section4b-design-and-secure-the-cloud-4-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-5-material-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.
section4b-design-and-secure-the-cloud-5-material-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-material-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-5-material-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-material-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-5-standard-workloads	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-5-standard-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
section4b-design-and-secure-the-cloud-6-material-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-material-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-material-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-material-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-6-material-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-material-workloads	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
section4b-design-and-secure-the-cloud-6-standard-workloads	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
section4b-design-and-secure-the-cloud-6-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4b-design-and-secure-the-cloud-6-standard-workloads	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
section4b-design-and-secure-the-cloud-6-standard-workloads	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
section4b-design-and-secure-the-cloud-6-standard-workloads	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
section4b-design-and-secure-the-cloud-6-standard-workloads	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
section4b-design-and-secure-the-cloud-6-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-material-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-8-material-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-material-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-8-material-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-material-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-8-standard-workloads	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
section4b-design-and-secure-the-cloud-8-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-8-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-8-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-material-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4b-design-and-secure-the-cloud-9-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4b-design-and-secure-the-cloud-9-material-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-material-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-9-material-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-material-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-9-material-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-9-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-9-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4b-design-and-secure-the-cloud-10-material-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
section4b-design-and-secure-the-cloud-10-material-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4b-design-and-secure-the-cloud-10-material-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-10-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-material-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-10-material-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
section4b-design-and-secure-the-cloud-10-material-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-10-material-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-10-material-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-10-material-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-10-material-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
section4b-design-and-secure-the-cloud-10-material-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-10-material-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-material-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-10-material-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
section4b-design-and-secure-the-cloud-10-material-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-material-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-10-standard-workloads	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-10-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-10-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-10-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-10-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-10-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-10-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-10-standard-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-10-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
section4b-design-and-secure-the-cloud-10-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-11-material-workloads	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
section4b-design-and-secure-the-cloud-11-material-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4b-design-and-secure-the-cloud-11-material-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4b-design-and-secure-the-cloud-11-material-workloads	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
section4b-design-and-secure-the-cloud-11-material-workloads	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4b-design-and-secure-the-cloud-11-material-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
section4b-design-and-secure-the-cloud-11-material-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
section4b-design-and-secure-the-cloud-11-material-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-11-material-workloads	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
section4b-design-and-secure-the-cloud-11-material-workloads	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
section4b-design-and-secure-the-cloud-12-standard-workloads	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
section4b-design-and-secure-the-cloud-12-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4b-design-and-secure-the-cloud-12-standard-workloads	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
section4b-design-and-secure-the-cloud-12-standard-workloads	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
section4b-design-and-secure-the-cloud-12-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
section4b-design-and-secure-the-cloud-12-standard-workloads	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4b-design-and-secure-the-cloud-12-standard-workloads	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-12-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
section4b-design-and-secure-the-cloud-14-material-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
section4b-design-and-secure-the-cloud-14-material-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
section4b-design-and-secure-the-cloud-14-material-workloads	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
section4b-design-and-secure-the-cloud-14-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	rds-in-backup-plan	To help with data backup processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
section4b-design-and-secure-the-cloud-14-material-workloads	redshift-backup-enabled	To help with data backup processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-material-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4b-design-and-secure-the-cloud-14-standard-workloads	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
section4b-design-and-secure-the-cloud-14-standard-workloads	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
section4b-design-and-secure-the-cloud-14-standard-workloads	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
section4b-design-and-secure-the-cloud-14-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4b-design-and-secure-the-cloud-14-standard-workloads	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
section4b-design-and-secure-the-cloud-14-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4b-design-and-secure-the-cloud-14-standard-workloads	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
section4b-design-and-secure-the-cloud-15-material-workloads	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-material-workloads	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
section4b-design-and-secure-the-cloud-15-material-workloads	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-material-workloads	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
section4b-design-and-secure-the-cloud-15-standard-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.
section4b-design-and-secure-the-cloud-15-standard-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-15-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-15-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
section4b-design-and-secure-the-cloud-15-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
section4b-design-and-secure-the-cloud-15-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-15-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-1-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4c-run-the-cloud-2-material-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-material-workloads	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
section4c-run-the-cloud-2-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4c-run-the-cloud-2-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4c-run-the-cloud-2-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4c-run-the-cloud-2-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4c-run-the-cloud-2-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4c-run-the-cloud-2-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4c-run-the-cloud-3-standard-workloads	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
section4c-run-the-cloud-3-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
section4c-run-the-cloud-3-standard-workloads	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
section4c-run-the-cloud-3-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
section4c-run-the-cloud-3-standard-workloads	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
section4c-run-the-cloud-3-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
section4c-run-the-cloud-3-standard-workloads	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
section4c-run-the-cloud-4-standard-workloads	response-plan-exists-maintained (process check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-4-material-workloads	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
section4c-run-the-cloud-4-material-workloads	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
section4c-run-the-cloud-4-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-4-material-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4c-run-the-cloud-5-standard-workloads	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4c-run-the-cloud-5-standard-workloads	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
section4c-run-the-cloud-5-standard-workloads	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
section4c-run-the-cloud-5-standard-workloads	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
section4c-run-the-cloud-6-material-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-material-workloads	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
section4c-run-the-cloud-6-material-workloads	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-material-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4c-run-the-cloud-6-material-workloads	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4c-run-the-cloud-6-standard-workloads	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-standard-workloads	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
section4c-run-the-cloud-6-standard-workloads	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Template

The template is available on GitHub: Operational Best Practices for ABS CCIG 2.0 Material Workloads.

Operational Best Practices for ABS CCIG 2.0 Standard Workloads

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the ABS Cloud Computing Implementation Guide 2.0 - Standard Workloads and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more ABS Cloud Computing Implementation Guide controls. An ABS Cloud Computing Implementation Guide control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
section4a-govern-the-cloud-2-standard-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account

Control ID	AWS Config Rule	Guidance
		information that accessed an Amazon S3 bucket, IP address, and time of event.
section4a-govern-the-cloud-2-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4a-govern-the-cloud-2-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4a-govern-the-cloud-2-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applicati ons within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4a-govern-the-cloud-2-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-2-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4a-govern-the-cloud-3-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-3-standard-workloads	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organizat ion's standards.
section4a-govern-the-cloud-3-standard-workloads	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
section4a-govern-the-cloud-3-standard-workloads	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	AWS Config Rule	Guidance
section4a-govern-the-cloud-3-standard-workloads	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.
section4b-design-and-secure-the-cloud-1-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-1-standard-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.
section4b-design-and-secure-the-cloud-1-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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section4b-design-and-secure-the-cloud-1-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-1-standard-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-1-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
section4b-design-and-secure-the-cloud-1-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-1-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-1-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-1-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
section4b-design-and-secure-the-cloud-1-standard-workloads	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
section4b-design-and-secure-the-cloud-1-standard-workloads	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-1-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
section4b-design-and-secure-the-cloud-1-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-2-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-2-standard-workloads	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
section4b-design-and-secure-the-cloud-2-standard-workloads	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
section4b-design-and-secure-the-cloud-3-standard-workloads	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
section4b-design-and-secure-the-cloud-3-standard-workloads	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
section4b-design-and-secure-the-cloud-3-standard-workloads	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-3-standard-workloads	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
section4b-design-and-secure-the-cloud-4-standard-workloads	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
section4b-design-and-secure-the-cloud-4-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
section4b-design-and-secure-the-cloud-4-standard-workloads	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
section4b-design-and-secure-the-cloud-4-standard-workloads	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.
section4b-design-and-secure-the-cloud-4-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-4-standard-workloads	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-4-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-4-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-4-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-4-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-4-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-4-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
section4b-design-and-secure-the-cloud-4-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-4-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-5-standard-workloads	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-5-standard-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-5-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-5-standard-workloads	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
section4b-design-and-secure-the-cloud-6-standard-workloads	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
section4b-design-and-secure-the-cloud-6-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4b-design-and-secure-the-cloud-6-standard-workloads	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
section4b-design-and-secure-the-cloud-6-standard-workloads	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
section4b-design-and-secure-the-cloud-6-standard-workloads	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
section4b-design-and-secure-the-cloud-6-standard-workloads	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
section4b-design-and-secure-the-cloud-6-standard-workloads	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
section4b-design-and-secure-the-cloud-6-standard-workloads	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
section4b-design-and-secure-the-cloud-6-standard-workloads	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-6-standard-workloads	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-6-standard-workloads	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
section4b-design-and-secure-the-cloud-6-standard-workloads	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-8-standard-workloads	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
section4b-design-and-secure-the-cloud-8-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-8-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-8-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-8-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-9-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-9-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-9-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-standard-workloads	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-10-standard-workloads	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4b-design-and-secure-the-cloud-10-standard-workloads	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
section4b-design-and-secure-the-cloud-10-standard-workloads	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
section4b-design-and-secure-the-cloud-10-standard-workloads	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-10-standard-workloads	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-10-standard-workloads	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-10-standard-workloads	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-10-standard-workloads	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
section4b-design-and-secure-the-cloud-10-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
section4b-design-and-secure-the-cloud-10-standard-workloads	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
section4b-design-and-secure-the-cloud-10-standard-workloads	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
section4b-design-and-secure-the-cloud-10-standard-workloads	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-10-standard-workloads	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
section4b-design-and-secure-the-cloud-12-standard-workloads	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
section4b-design-and-secure-the-cloud-12-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
section4b-design-and-secure-the-cloud-12-standard-workloads	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
section4b-design-and-secure-the-cloud-12-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
section4b-design-and-secure-the-cloud-12-standard-workloads	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-12-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4b-design-and-secure-the-cloud-12-standard-workloads	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
section4b-design-and-secure-the-cloud-12-standard-workloads	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-12-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-12-standard-workloads	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-12-standard-workloads	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4b-design-and-secure-the-cloud-14-standard-workloads	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
section4b-design-and-secure-the-cloud-14-standard-workloads	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
section4b-design-and-secure-the-cloud-14-standard-workloads	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4b-design-and-secure-the-cloud-14-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
section4b-design-and-secure-the-cloud-14-standard-workloads	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
section4b-design-and-secure-the-cloud-14-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-14-standard-workloads	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4b-design-and-secure-the-cloud-14-standard-workloads	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-14-standard-workloads	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
section4b-design-and-secure-the-cloud-14-standard-workloads	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
section4b-design-and-secure-the-cloud-15-standard-workloads	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-15-standard-workloads	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
section4b-design-and-secure-the-cloud-15-standard-workloads	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
section4b-design-and-secure-the-cloud-15-standard-workloads	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-15-standard-workloads	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
section4b-design-and-secure-the-cloud-15-standard-workloads	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
section4b-design-and-secure-the-cloud-15-standard-workloads	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
section4b-design-and-secure-the-cloud-15-standard-workloads	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
section4b-design-and-secure-the-cloud-15-standard-workloads	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-1-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4c-run-the-cloud-2-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
section4c-run-the-cloud-2-standard-workloads	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
section4c-run-the-cloud-2-standard-workloads	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
section4c-run-the-cloud-2-standard-workloads	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
section4c-run-the-cloud-2-standard-workloads	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-2-standard-workloads	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
section4c-run-the-cloud-2-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
section4c-run-the-cloud-3-standard-workloads	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
section4c-run-the-cloud-3-standard-workloads	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
section4c-run-the-cloud-3-standard-workloads	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
section4c-run-the-cloud-3-standard-workloads	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
section4c-run-the-cloud-3-standard-workloads	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
section4c-run-the-cloud-3-standard-workloads	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
section4c-run-the-cloud-3-standard-workloads	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
section4c-run-the-cloud-3-standard-workloads	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
section4c-run-the-cloud-3-standard-workloads	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-3-standard-workloads	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
section4c-run-the-cloud-4-standard-workloads	response-plan-exists-maintained (process check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel.
section4c-run-the-cloud-5-standard-workloads	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
section4c-run-the-cloud-5-standard-workloads	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
section4c-run-the-cloud-5-standard-workloads	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
section4c-run-the-cloud-5-standard-workloads	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-5-standard-workloads	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
section4c-run-the-cloud-6-standard-workloads	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-standard-workloads	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
section4c-run-the-cloud-6-standard-workloads	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
section4c-run-the-cloud-6-standard-workloads	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Template

The template is available on GitHub: Operational Best Practices for ABS CCIG 2.0 Standard Workloads.

Operational Best Practices for ACSC Essential 8

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Australian Cyber Security Centre (ACSC) Essential Eight Maturity Model and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more ACSC Essential Eight controls. An ACSC Essential Eight control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings. Some of the mappings to config rules are for the higher order section (eg. Mitigation Strategies to Limit the Extent of Cyber Security Incidents) as opposed to the more prescriptive sections.

This sample conformance pack template contains mappings to controls within the ACSC Essential 8, which was created by the Commonwealth of Australia and can be found at ACSC | Essential

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Control ID	AWS Config Rule	Guidance
Application_control	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
Application_control	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Application_control	ec2-instance-managed-by-sys tems-manager	An inventory of the software platforms and applicati ons within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances

Control ID	AWS Config Rule	Guidance
		with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
Application_control	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.
Application_control	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
Application_control	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	AWS Config Rule	Guidance
Application_control	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Patch_applications	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
Patch_applications	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
Patch_applications	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	AWS Config Rule	Guidance
Patch_applications	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
Patch_applications	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
Patch_applications	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
Patch_applications	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
Restrict_administrative_privileges	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Restrict_administrative_privileges	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
Restrict_administrative_privileges	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
Restrict_administrative_privileges	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
Restrict_administrative_privileges	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.
Restrict_administrative_privileges	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.
Restrict_administrative_privileges	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
Restrict_administrative_privileges	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
Restrict_administrative_privileges	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
Restrict_administrative_privileges	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Patch_operating_systems	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organizat ion's policies and procedures.
Multi-factor_authentication	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
Multi-factor_authentication	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
Multi-factor_authentication	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
Multi-factor_authentication	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
Multi-factor_authentication	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Regular_backups	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
Regular_backups	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Regular_backups	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Regular_backups	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Regular_backups	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
Regular_backups	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
Regular_backups	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Regular_backups	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
Regular_backups	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Regular_backups	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.
Regular_backups	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	AWS Config Rule	Guidance
Regular_backups	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
Regular_backups	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Template

The template is available on GitHub: Operational Best Practices for ACSC Essential 8.

Operational Best Practices for ACSC ISM

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Australian Cyber Security Centre (ACSC) Information Security Manual (ISM) 2020-06 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more ISM controls. An ISM control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the ISM framework, which was created by the Commonwealth of Australia and can be found at Australian Government Information Security Manual. Licensing of the framework under Creative Commons Attribution 4.0 International Public License and copyright information for the framework (including a disclaimer of warranties) can be found at ACSC | Copyright.

Control ID	AWS Config Rule	Guidance
43	response-plan-exists-maintained (process check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel.
252	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	AWS Config Rule	Guidance
261	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
261	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
261	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
298	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	AWS Config Rule	Guidance
298	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
298	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
298	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
380	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.
459	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
459	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
459	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
459	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
459	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
459	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
459	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
459	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
459	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
459	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
459	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
459	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
459	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
459	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
459	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.
459	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
459	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	AWS Config Rule	Guidance
459	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
459	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
459	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
580	audit-log-policy-exists (process check)	Establish and maintain an audit log management policy that defines your organizat ion's logging requireme nts. This includes, but is not limited to, review and retention of audit logs.
634	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
859	cw-loggroup-retention-perio d-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	AWS Config Rule	Guidance
974	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
974	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
1139	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
1173	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1173	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1173	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
1173	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
1173	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
1228	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
1240	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
1240	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
1271	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
1271	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
1277	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
1277	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.

Control ID	AWS Config Rule	Guidance
1277	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
1380	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
1380	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1380	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	AWS Config Rule	Guidance
1380	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
1380	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
1380	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
1380	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
1380	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
1380	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
1380	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
1380	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
1380	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
1380	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	AWS Config Rule	Guidance
1380	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
1380	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.
1380	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
1380	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.
1380	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
1380	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
1380	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
1380	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
1380	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
1388	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
1388	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
1401	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
1401	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
1401	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
1401	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1401	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1402	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
1404	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
1405	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
1405	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
1405	multi-region-cloudtrail-enabled	MULTI_REGION_CLOUD_TRAIL_ENABLED
1405	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
1405	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
1405	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
1405	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
1405	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
1405	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1405	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
1405	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
1405	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
1405	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
1405	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.
1405	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
1405	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	AWS Config Rule	Guidance
1405	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
1490	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
1490	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
1490	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.
1490	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
1490	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
1490	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
1501	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organizat ion's policies and procedures.
1504	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
1504	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
1504	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
1504	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1504	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1509	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
1509	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
1509	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
1509	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
1509	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
1509	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
1509	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
1509	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
1509	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1509	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
1509	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
1509	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
1509	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
1509	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.
1509	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
1509	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	AWS Config Rule	Guidance
1509	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
1511	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
1511	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
1511	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	AWS Config Rule	Guidance
1511	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
1511	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1511	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
1511	rds-in-backup-plan	To help with data backup processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1511	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
1511	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
1511	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1511	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	AWS Config Rule	Guidance
1511	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.
1511	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1511	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
1511	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
1511	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.
1511	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	AWS Config Rule	Guidance
1515	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
1515	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1515	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
1515	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1515	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
1515	rds-in-backup-plan	To help with data backup processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1515	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
1515	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
1515	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
1515	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.
1515	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	AWS Config Rule	Guidance
1515	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
1515	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
1536	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
1537	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
1537	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
1552	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1552	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
1552	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
1552	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
1552	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
1579	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
1580	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
1580	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
1580	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.
1650	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
1650	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
1650	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
1650	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
1650	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
1650	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
1650	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
1650	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
1650	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1650	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
1650	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
1650	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
1650	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
1650	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.
1650	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
1650	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	AWS Config Rule	Guidance
1650	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
1657	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
1657	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
1657	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1657	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.
1657	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.

Control ID	AWS Config Rule	Guidance
1657	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
1657	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
1661	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
1661	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
1661	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
1661	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
1661	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
1661	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
1661	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
1661	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
1661	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1661	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
1661	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
1661	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
1661	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
1661	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
1679	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
1679	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
1679	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
1679	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1679	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1680	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
1680	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
1680	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
1680	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1680	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1681	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
1681	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
1681	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
1681	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
1681	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1683	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
1683	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
1690	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
1690	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1690	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	AWS Config Rule	Guidance
1690	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
1690	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
1690	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
1690	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
1691	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
1691	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1691	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	AWS Config Rule	Guidance
1691	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
1691	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
1691	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
1691	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
1693	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
1693	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1693	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	AWS Config Rule	Guidance
1693	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
1693	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
1693	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
1693	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
1694	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
1695	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
1707	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.
P1	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
P1	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
P3	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
P5	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
P7	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
P7	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
P7	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
P7	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
P8	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
P9	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
P9	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.
P9	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
P9	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.
P9	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredR etentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	AWS Config Rule	Guidance
P9	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
P9	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
P9	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
P9	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.

Control ID	AWS Config Rule	Guidance
P9	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
P9	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
P9	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
P9	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.

Control ID	AWS Config Rule	Guidance
P9	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
P10	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
P10	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
P10	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
P10	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
P10	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
P11	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Template

The template is available on GitHub: Operational Best Practices for ACSC ISM.

Operational Best Practices for AI and ML

This conformance pack contains AWS Config rules based on AI and ML. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for AI and ML.

Operational Best Practices for Amazon API Gateway

This conformance pack contains AWS Config rules based on the usage of Amazon API Gateway within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Amazon API Gateway.

Operational Best Practices for Amazon CloudWatch

This conformance pack contains AWS Config rules based on the usage of Amazon CloudWatch within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Amazon CloudWatch.

Operational Best Practices for Amazon DynamoDB

The template is available on GitHub: Operational Best Practices for Amazon DynamoDB.

Operational Best Practices for Amazon S3

The template is available on GitHub: Operational Best Practices for Amazon S3.

Operational Best Practices for APRA CPG 234

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Australian Prudential Regulation Authority (APRA) CPG 234 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more APRA CPG 234 controls. An APRA CPG 234 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within APRA CPG 234 2019, which was created by the Commonwealth of Australia and can be found at Prudential Practice Guide: CPG 234 Information Security. Licensing of the framework under Creative Commons Australia Attribution 3.0 Licence and copyright information for the framework (including a disclaimer of warranties) can be found at APRA | Copyright.

Control ID	AWS Config Rule	Guidance
36a	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
36a	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
36a	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic

Control ID	AWS Config Rule	Guidance
		Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organizat ion's policies and procedures.
36b	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applicati ons within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
36b	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
36b	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
36b	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
36b	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
36b	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
36b	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
36c	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
36c	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
36c	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
36c	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
36c	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
36c	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
36c	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
36c	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
36c	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
36d	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36d	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
36d	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
36d	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
36d	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
36d	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
36d	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
36d	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
36d	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
36d	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36d	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
36d	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
36d	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
36d	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
36d	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
36d	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.

Control ID	AWS Config Rule	Guidance
36d	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
36d	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
36d	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
36d	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
36d	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
36d	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
36d	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
36d	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
36d	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
36d	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
36d	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
36d	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
36d	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
36d	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
36d	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
36d	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
36d	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
36d	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
36d	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
36d	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
36d	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
36d	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
36d	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
36d	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
36d	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
36d	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
36e	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
36e	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
36e	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
36e	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36e	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
36e	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
36e	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
36e	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
36e	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
36e	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
36e	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
36e	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36e	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
36e	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
36e	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
36e	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
36e	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
36e	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
36e	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
36e	s3-bucket-level-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
36e	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	AWS Config Rule	Guidance
36e	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
36e	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
36e	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
36e	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
36e	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
36e	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
36f	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
36f	ebs-snapshot-public-restora ble-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36f	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
36f	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
36f	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
36f	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
36f	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
36f	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
36f	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
36f	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
36f	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
36f	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
36f	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
36f	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
36f	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
36f	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
36f	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
36f	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
36f	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
36f	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
36f	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
36f	s3-bucket-level-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
36f	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	AWS Config Rule	Guidance
36f	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
36f	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
36f	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
36f	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
36f	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
36f	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
36g	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
36g	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
36g	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
36h	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
36h	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
36h	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
36h	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
36h	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
36h	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
36h	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
36h	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
36i	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
36i	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
36i	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
36i	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
36i	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
36i	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.
36i	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
36i	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
36i	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
36i	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
36i	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
36j	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
36j	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
36j	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
36j	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
36j	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
36j	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
36j	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
36j	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notificat ion Service (Amazon SNS) when a function has failed.

Control ID	AWS Config Rule	Guidance
36j	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.
36j	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	AWS Config Rule	Guidance
36j	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
36l	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
36l	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
36l	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	AWS Config Rule	Guidance
36l	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
36l	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
36l	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
36l	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
36l	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
36l	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	AWS Config Rule	Guidance
36l	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
36l	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
36l	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
36l	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
36l	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
36l	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
36l	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
36l	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	AWS Config Rule	Guidance
39(a)(b)(d)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
39(a)(b)(d)	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
39(a)(b)(d)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
40	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
40	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
40	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
40	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
44a	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
44a	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
44a	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
44b	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
44b	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
44b	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
44c	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
44c	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
44c	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
44c	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
45	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
45	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
45	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
45	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
45	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
45	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
45	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
45	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
45	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
45	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
45	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
45	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
45	ebs-snapshot-public-restora ble-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
45	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
45	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
45	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
45	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
45	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
45	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
45	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
45	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
45	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
45	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
45	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
45	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
45	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
45	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
45	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
45	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
45	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
45	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	AWS Config Rule	Guidance
45	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
45	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
45	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
45	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
45	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
45	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
45	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
45	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
45	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	AWS Config Rule	Guidance
45	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.

Control ID	AWS Config Rule	Guidance
45	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
45	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
47c	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
47c	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
47c	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
47c	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
47c	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
47c	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
47c	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
52c	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
52c	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
52c	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
52c	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
52c	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
52c	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
52c	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
52c	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
52c	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
52c	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
52c	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
52c	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
52c	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
52c	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	AWS Config Rule	Guidance
52c	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
52c	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
52c	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
52c	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
52d	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
52d	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
52d	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
52d	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
52d	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
52d	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
52d	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
52d	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
52d	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
52d	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
52d	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
52d	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
52d	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
52d	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
52d	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
52d	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
52d	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
52d	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
52d	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	AWS Config Rule	Guidance
52d	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
52d	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
52d	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.

Control ID	AWS Config Rule	Guidance
52d	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
52e	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
52e	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
53	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
53	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
53	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
53	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthori zed users.
53	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
53	ebs-snapshot-public-restora ble-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
53	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
53	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
53	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
53	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
53	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
53	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
53	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
53	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
53	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
53	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
53	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
53	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
53	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
53	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
53	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
53	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
53	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
54	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
54	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
54	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
54	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
54	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
54	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
54	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	AWS Config Rule	Guidance
54	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
54	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
54	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
54	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
54	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
54	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
54	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
54	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
54	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
54	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
54	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
54	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
54	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
54	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
54	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
54	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
54	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
54	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
54	elbv2-acm-certificate-requi red	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
55	elasticsearch-node-to-node- encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
55	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
67	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
67	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
67	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
67	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
67	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
67	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
67	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
67	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
67	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
67	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
67	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
67	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
67	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
67	opensearch-logs-to-cloudwat ch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
67	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
67	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
67	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
67	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
68	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
68	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
73	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
73	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AttachmentA_1(b)(h)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AttachmentA_1(b)(h)	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
AttachmentA_1(b)(h)	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(b)(h)	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AttachmentA_1(c)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
AttachmentA_1(c)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
AttachmentA_1(e)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
AttachmentA_1(e)	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
AttachmentA_1(e)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AttachmentA_1(e)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AttachmentA_1(e)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
AttachmentA_1(e)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
AttachmentA_1(e)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
AttachmentA_1(e)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
AttachmentA_1(e)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AttachmentB_1	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organizat ion from various security breaches or incidents.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
AttachmentC_4	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AttachmentC_4	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AttachmentC_4	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
AttachmentC_4	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
AttachmentC_4	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AttachmentC_4	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AttachmentC_4	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
AttachmentC_4	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.
AttachmentC_4	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
AttachmentC_4	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AttachmentC_5	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
AttachmentC_5	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AttachmentC_5	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
AttachmentC_5	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
AttachmentC_5	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
AttachmentC_6	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AttachmentC_6	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
AttachmentC_6	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
AttachmentC_7(c)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
AttachmentC_7(h)	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AttachmentC_7(h)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AttachmentC_7(h)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
AttachmentC_7(h)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
AttachmentC_7(h)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
AttachmentC_7(h)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AttachmentC_7(h)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
AttachmentC_7(h)	opensearch-logs-to-cloudwat ch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(h)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
AttachmentC_7(h)	elasticsearch-logs-to-cloud watch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(i)	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
AttachmentC_7(j)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(j)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
AttachmentC_7(j)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
AttachmentC_7(j)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AttachmentC_8	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AttachmentC_8	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AttachmentC_8	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AttachmentC_8	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
AttachmentC_8	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
AttachmentC_8	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
AttachmentC_8	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
AttachmentD_1	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
AttachmentD_1	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
AttachmentE_4	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
AttachmentE_4	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.
AttachmentE_5(d)	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.
AttachmentE_1(a)(b)(d)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
AttachmentE_1(a)(b)(d)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AttachmentE_1(a)(b)(d)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AttachmentE_1(a)(b)(d)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
AttachmentE_1(a)(b)(d)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
AttachmentE_1(a)(b)(d)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
AttachmentE_1(a)(b)(d)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
AttachmentE_1(a)(b)(d)	kms-cmk-not-scheduled-for-d eletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
AttachmentE_1(a)(b)(d)	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
AttachmentE_1(a)(b)(d)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
AttachmentE_1(a)(b)(d)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
AttachmentE_1(a)(b)(d)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
AttachmentE_1(a)(b)(d)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
AttachmentE_1(a)(b)(d)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Template

The template is available on GitHub: Operational Best Practices for APRA CPG 234.

Operational Best Practices for Asset Management

This conformance pack contains AWS Config rules based on asset management within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Asset Management.

Operational Best Practices for AWS Backup

This conformance pack contains AWS Config rules based on AWS Backup within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for AWS Backup.

Operational Best Practices for AWS Identity And Access Management

The template is available on GitHub: Operational Best Practices for AWS Identity And Access Management.

Operational Best Practices for AWS Well-Architected Framework Reliability Pillar

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Amazon Web Services' Well-Architected Framework Reliability Pillar and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more of the pillar's design principles. A Well-Architected Framework category can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
REL-1	How do you manage service quotas and constraints? For cloud-based	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked

Control ID	Control Description	AWS Config Rule	Guidance
	workload architectures, there are service quotas (which are also referred to as service limits). These quotas exist to prevent accidentally provisioning more resources than you need and to limit request rates on API operations so as to protect services from abuse. There are also resource constraints, for example, the rate that you can push bits down a fiber-optic cable, or the amount of storage on a physical disk.		on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
REL-1	How do you manage service quotas and constraints? For cloud-based workload architectures, there are service quotas (which are also referred to as service limits). These quotas exist to prevent accidentally provisioning more resources than you need and to limit request rates on API operations so as to protect services from abuse. There are also resource constraints, for example, the rate that you can push bits down a fiber-optic cable, or the amount of storage on a physical disk.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
REL-1	How do you manage service quotas and constraints? For cloud-based workload architectures, there are service quotas (which are also referred to as service limits). These quotas exist to prevent accidentally provisioning more resources than you need and to limit request rates on API operations so as to protect services from abuse. There are also resource constraints, for example, the rate that you can push bits down a fiber-optic cable, or the amount of storage on a physical disk.	ecs-task-definition-memory-hard-limit	Limiting the maximum memory available to your Amazon Elastic Container Service (ECS) containers ensures that your resource usage cannot be abused in the event of malicious access to your containers.

Control ID	Control Description	AWS Config Rule	Guidance
REL-2	How do you plan your network topology? Workloads often exist in multiple environments. These include multiple cloud environments (both publicly accessible and private) and possibly your existing data center infrastructure. Plans must include network considerations such as intra- and inter-system connectivity, public IP address management, private IP address management, and domain name resolution.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
REL-2	How do you plan your network topology? Workloads often exist in multiple environments. These include multiple cloud environments (both publicly accessible and private) and possibly your existing data center infrastructure. Plans must include network considerations such as intra- and inter-system connectivity, public IP address management, private IP address management, and domain name resolution.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
REL-2	How do you plan your network topology? Workloads often exist in multiple environments. These include multiple cloud environments (both publicly accessible and private) and possibly your existing data center infrastructure. Plans must include network considerations such as intra- and inter-system connectivity, public IP address management, private IP address management, and domain name resolution.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
REL-5	How do you Design Interactions in a Distributed System to Mitigate or Withstand Failures? Distributed systems rely on communications networks to interconnect components, such as servers or services. Your workload must operate reliably despite data loss or latency in these networks. Components of the distributed system must operate in a way that does not negatively impact other components or the workload. These best practices prevent failures and improve mean time between failures (MTBF).	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	beanstalk-enhanced -health-reporting- enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastru cture. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	ecs-container-insi ghts-enabled	Monitoring is an important part of maintaining the reliability, availabil ity, and performan ce of Amazon Elastic Container Service (ECS) and your AWS solutions. Container Insights also provides diagnostic informati on, such as container restart failures, to help you isolate issues and resolve them quickly.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	ec2-instance-detai led-monitoring-ena bled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitorin g on the Amazon EC2 console, which displays monitorin g graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	rds-enhanced-monit oring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availabil ity. This provides detailed visibility into the health of your Amazon RDS database instances . When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
REL-6	How do you monitor workload resources ? Logs and metrics are powerful tools to gain insight into the health of your workload. You can configure your workload to monitor logs and metrics and send notifications when thresholds are crossed or significa nt events occur. Monitoring enables your workload to recognize when low-performance thresholds are crossed or failures occur, so it can recover automatically in response.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
REL-7	How do you design your workload to adapt to changes in demand? A scalable workload provides elasticity to add or remove resources automatically so that they closely match the current demand at any given point in time.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
REL-7	How do you design your workload to adapt to changes in demand? A scalable workload provides elasticity to add or remove resources automatically so that they closely match the current demand at any given point in time.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
REL-7	How do you design your workload to adapt to changes in demand? A scalable workload provides elasticity to add or remove resources automatically so that they closely match the current demand at any given point in time.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
REL-8	How do you implement change? Controlled changes are necessary to deploy new functionality, and to ensure that the workloads and the operating environment are running known software and can be patched or replaced in a predictable manner. If these changes are uncontrolled, then it makes it difficult to predict the effect of these changes, or to address issues that arise because of them.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
REL-8	How do you implement change? Controlled changes are necessary to deploy new functiona lity, and to ensure that the workloads and the operating environment are running known software and can be patched or replaced in a predictable manner. If these changes are uncontrolled, then it makes it difficult to predict the effect of these changes, or to address issues that arise because of them.	rds-automatic-mino r-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
REL-8	How do you implement change? Controlled changes are necessary to deploy new functionality, and to ensure that the workloads and the operating environment are running known software and can be patched or replaced in a predictable manner. If these changes are uncontrolled, then it makes it difficult to predict the effect of these changes, or to address issues that arise because of them.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
REL-8	How do you implement change? Controlled changes are necessary to deploy new functionality, and to ensure that the workloads and the operating environment are running known software and can be patched or replaced in a predictable manner. If these changes are uncontrolled, then it makes it difficult to predict the effect of these changes, or to address issues that arise because of them.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
REL-9	How do you back up data? Back up data, applications, and configuration to meet your requirements for recovery time objectives (RTO) and recovery point objectives (RPO).	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	clb-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	lambda-vpc-multi-az-check	If your AWS Lambda function is configured to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availability Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	opensearch-data-node-fault-tolerance	Amazon OpenSearch Service (OpenSearch Service) requires at least three data nodes for high availability and fault-tolerance. Deploying an OpenSearch Service domain with at least three data nodes ensures cluster operations if a node fails.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
REL-10	How do you use fault isolation to protect your workload? Fault isolated boundaries limit the effect of a failure within a workload to a limited number of components. Components outside of the boundary are unaffected by the failure. Using multiple fault isolated boundaries, you can limit the impact on your workload.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Template

The template is available on GitHub: Operational Best Practices for AWS Well-Architected Reliability Pillar.

Operational Best Practices for AWS Well-Architected Framework Security Pillar

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Amazon Web Services' Well-Architected Framework Security Pillar and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more of the pillar's design principles. A Well-Architected Framework category can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
	intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.		

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Control ID	Control Description	AWS Config Rule	Guidance
SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

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SEC-1	How do you securely operate your workload? To operate your workload securely, you must apply overarching best practices to every area of security. Take requirements and processes that you have defined in operational excellence at an organizational and workload level, and apply them to all areas. Staying up to date with AWS and industry recommendations and threat intelligence helps you evolve your threat model and control objectives. Automating security processes, testing, and validation allow you to scale your security operations.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

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SEC-2	How do you manage identities for people and machines? There are two types of identities you need to manage when approaching operating secure AWS workloads. Understanding the type of identity you need to manage and grant access helps you ensure the right identities have access to the right resources under the right condition s. Human Identitie s: Your administr ators, developers, operators, and end users require an identity to access your AWS environme nts and applications. These are members of your organizat ion, or external users with whom you collaborate, and who interact with your AWS resources from a web browser,	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

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SEC-2	How do you manage identities for people and machines? There are two types of identities you need to manage when approaching operating secure AWS workloads. Understanding the type of identity you need to manage and grant access helps you ensure the right identities have access to the right resources under the right condition s. Human Identitie s: Your administr ators, developers, operators, and end users require an identity to access your AWS environme nts and applications. These are members of your organizat ion, or external users with whom you collaborate, and who interact with your AWS resources from a web browser,	secretsmanager-sec ret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

Control ID	Control Description	AWS Config Rule	Guidance
SEC-2	How do you manage identities for people and machines? There are two types of identities you need to manage when approaching operating secure AWS workloads. Understanding the type of identity you need to manage and grant access helps you ensure the right identities have access to the right resources under the right condition s. Human Identitie s: Your administr ators, developers, operators, and end users require an identity to access your AWS environme nts and applications. These are members of your organizat ion, or external users with whom you collaborate, and who interact with your AWS resources from a web browser,	secretsmanager-usi ng-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

Control ID	Control Description	AWS Config Rule	Guidance
SEC-2	How do you manage identities for people and machines? There are two types of identities you need to manage when approaching operating secure AWS workloads. Understanding the type of identity you need to manage and grant access helps you ensure the right identities have access to the right resources under the right condition s. Human Identitie s: Your administr ators, developers, operators, and end users require an identity to access your AWS environme nts and applications. These are members of your organizat ion, or external users with whom you collaborate, and who interact with your AWS resources from a web browser,	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	client applicati on, or interactive command-line tools. Machine Identities: Your service applicati ons, operational tools, and workloads require an identity to make requests to AWS services - for example, to read data. These identitie s include machines running in your AWS environment such as Amazon EC2 instances or AWS Lambda functions . You might also manage machine identities for external parties who need access. Additionally, you may also have machines outside of AWS that need access to your AWS environment.		

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Each component or resource of your workload needs to be accessed by administr ators, end users, or other components. Have a clear definitio n of who or what should have access to each component, choose the appropria te identity type and method of authentic ation and authoriza tion.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Each component or resource of your workload needs to be accessed by administr ators, end users, or other components. Have a clear definitio n of who or what should have access to each component, choose the appropria te identity type and method of authentic ation and authoriza tion.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Each component or resource of your workload needs to be accessed by administr ators, end users, or other components. Have a clear definitio n of who or what should have access to each component, choose the appropria te identity type and method of authentic ation and authoriza tion.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Each component or resource of your workload needs to be accessed by administrators, end users, or other components. Have a clear definition of who or what should have access to each component, choose the appropriate identity type and method of authentication and authorization.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Establish common controls that restrict access to all identities in your organization. For example, you can restrict access to specific AWS Regions, or prevent your operators from deleting common resources, such as an IAM role used for your central security team	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.
SEC-3	How do you manage permissions for people and machines? Continuously monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
SEC-3	How do you manage permissio ns for people and machines? Continuou sly monitor findings that highlight public and cross account access. Reduce public access and cross account access to only resources that require this type of access.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an object in an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-4	How do you detect and investigate security events? Capture and analyze events from logs and metrics to gain visibility. Take action on security events and potential threats to help secure your workload.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√ ¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√ ¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	ec2-instance-multi ple-eni-check	This rule checks if your Amazon Elastic Compute Cloud (Amazon EC2) instances have multiple ENIs. Having multiple ENIs can cause dual-homed instances, meaning instances that have multiple subnets. This can add network security complexit y and introduce unintended network paths and access.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√ ¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectiv ity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no condition s could result in unintended behavior.
SEC-5	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
SEC-5	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	vpc-network-acl-un used-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SEC-5	How do you protect your network resources? Any workload that has some form of network connectivity, whether it,Äö√Ñ√¥s the internet or a private network, requires multiple layers of defense to help protect from external and internal network-based threats.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances, containers, AWS Lambda functions, database services, IoT devices, and more.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	elastic-beanstalk-managed-updates-en abled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ecr-private-image-scanning-enabled	Amazon Elastic Container Repositor y (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ecs-container-insi ghts-enabled	Monitoring is an important part of maintaining the reliability, availabil ity, and performan ce of Amazon Elastic Container Service (ECS) and your AWS solutions. Container Insights also provides diagnostic informati on, such as container restart failures, to help you isolate issues and resolve them quickly.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances, containers, AWS Lambda functions, database services, IoT devices, and more.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-instance-multi ple-eni-check	This rule checks if your Amazon Elastic Compute Cloud (Amazon EC2) instances have multiple ENIs. Having multiple ENIs can cause dual-homed instances, meaning instances that have multiple subnets. This can add network security complexit y and introduce unintended network paths and access.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances , containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances, containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-6	How do you protect your compute resources? Compute resources in your workload require multiple layers of defense to help protect from external and internal threats. Compute resources include EC2 instances, containers, AWS Lambda functions, database services, IoT devices, and more.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implement ing multiple controls, to reduce the risk of unauthorized access or mishandling.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SEC-8	How do you protect your data at rest? Protect your data at rest by implement ing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-bucket-server-s ide-encryption-ena bled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implement ing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
SEC-8	How do you protect your data at rest? Protect your data at rest by implement ing multiple controls, to reduce the risk of unauthorized access or mishandling.	account-part-of-or ganizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsist ent account configura tions, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-8	How do you protect your data at rest? Protect your data at rest by implementing multiple controls, to reduce the risk of unauthorized access or mishandling.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SEC-9	How do you protect your data in transit? Protect your data in transit by implementing multiple controls to reduce the risk of unauthorized access or loss.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Template

The template is available on GitHub: Operational Best Practices for AWS Well-Architected Security Pillar.

Operational Best Practices for BCP and DR

This conformance pack contains AWS Config rules based on BCP and DR within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for BCP and DR.

Operational Best Practices for BNM RMiT

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Bank Negara Malaysia (BNM) Risk Management in Technology (RMiT) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more BNM RMiT controls. A BNM RMiT control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	Where this involves a reliance on third-party assessments, the financial institution shall consider whether such reliance is consistent with the financial institution's risk appetite and tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	api-gw-cache-enabl ed-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	cmk-backing-key-ro tation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	dynamodb-table-enc rypted-kms	Ensure that encryptio n is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	opensearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	rds-storage-encryp ted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
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Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

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Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	sagemaker-endpoint -configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	sagemaker-notebook -instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	secretsmanager-usi ng-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.18	A financial instituti on must conduct due diligence and evaluate the cryptographic controls associated with the technolog y used in order to protect the confident iality, integrity , authentication, authorisation and non -repudiation of information. Where a financial instituti on does not generate its own encryption keys, the financial institution shall undertake appropria te measures to ensure robust controls and processes are in place to manage encryption keys. Where this involves a reliance on third-party assessments, the financial instituti on shall consider whether such reliance is consistent with the financial instituti on's risk appetite and	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	tolerance. A financial institution must also give due regard to the system resources required to support the cryptographic controls and the risk of reduced network traffic visibility of data that has been encrypted.		

Control ID	Control Description	AWS Config Rule	Guidance
10.20	A financial institution shall store public cryptographic keys in a certificate issued by a certificate authority as appropriate to the level of risk. Such certificates associated with customers shall be issued by recognised certificate authorities. The financial institution must ensure that the implementation of authentication and signature protocols using such certificates are subject to strong protection to ensure that the use of private cryptographic keys corresponding to the user certificates are legally binding and irrefutable. The initial issuance and subsequent renewal of such certificates must be consistent with industry best practices and applicable legal/regulatory specifications.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.20	A financial institution shall store public cryptographic keys in a certificate issued by a certificate authority as appropriate to the level of risk. Such certificates associated with customers shall be issued by recognised certificate authorities. The financial institution must ensure that the implementation of authentication and signature protocols using such certificates are subject to strong protection to ensure that the use of private cryptographic keys corresponding to the user certificates are legally binding and irrefutable. The initial issuance and subsequent renewal of such certificates must be consistent with industry best practices and applicable legal/regulatory specifications.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.27	A financial institution must establish real-time monitoring mechanisms to track capacity utilisation and performance of key processes and services. These monitoring mechanisms shall be capable of providing timely and actionable alerts to administrators.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
10.34	A financial institution must ensure the network services for its critical systems are reliable and have no SPOF in order to protect the critical systems against potential network faults and cyber threats.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
10.34	A financial institution must ensure the network services for its critical systems are reliable and have no SPOF in order to protect the critical systems against potential network faults and cyber threats.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
10.35	A financial institution must establish real-time network bandwidth monitoring processes and corresponding network service resilience metrics to flag any over utilisation of bandwidth and system disruptions due to bandwidth congestion and network faults. This includes traffic analysis to detect trends and anomalies.	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportunities for optimization. Ensure X-Ray is enables so you can see detailed information not only about the request and response, but also about calls that your application makes to downstream AWS resources, microservices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
10.35	A financial institution must establish real-time network bandwidth monitoring processes and corresponding network service resilience metrics to flag any over utilisation of bandwidth and system disruptions due to bandwidth congestion and network faults. This includes traffic analysis to detect trends and anomalies.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.35	A financial institution must establish real-time network bandwidth monitoring processes and corresponding network service resilience metrics to flag any over utilisation of bandwidth and system disruptions due to bandwidth congestion and network faults. This includes traffic analysis to detect trends and anomalies.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
10.35	A financial institution must establish real-time network bandwidth monitoring processes and corresponding network service resilience metrics to flag any over utilisation of bandwidth and system disruptions due to bandwidth congestion and network faults. This includes traffic analysis to detect trends and anomalies.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
10.36	A financial institution must ensure network services supporting critical systems are designed and implemented to ensure the confidentiality, integrity and availability of data.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.36	A financial institution must ensure network services supportin g critical systems are designed and implemented to ensure the confident iality, integrity and availability of data.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
10.36	A financial institution must ensure network services supportin g critical systems are designed and implemented to ensure the confident iality, integrity and availability of data.	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
10.36	A financial institution must ensure network services supportin g critical systems are designed and implemented to ensure the confident iality, integrity and availability of data.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.
10.36	A financial institution must ensure network services supportin g critical systems are designed and implemented to ensure the confident iality, integrity and availability of data.	nlb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Network Load Balancers (NLBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
10.38	A financial institution must ensure sufficient and relevant network device logs are retained for investigations and forensic purposes for at least three years.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

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10.51	A financial instituti on must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthori sed disclosure and access. This shall include retaining ownership, control and management of all data pertainin g to customer and counterpa rty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

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10.51	A financial instituti on must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthori sed disclosure and access. This shall include retaining ownership, control and management of all data pertainin g to customer and counterpa rty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial instituti on must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthori sed disclosure and access. This shall include retaining ownership, control and management of all data pertainin g to customer and counterpa rty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

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10.51	A financial instituti on must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthori sed disclosure and access. This shall include retaining ownership, control and management of all data pertainin g to customer and counterpa rty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

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10.51	A financial instituti on must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthori sed disclosure and access. This shall include retaining ownership, control and management of all data pertainin g to customer and counterpa rty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

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10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
10.51	A financial institution must implement appropriate safeguards on customer and counterparty information and proprietary data when using cloud services to protect against unauthorised disclosure and access. This shall include retaining ownership, control and management of all data pertaining to customer and counterparty information, proprietary data and services hosted on the cloud, including the relevant cryptographic keys management.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial instituti on must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial instituti on must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.52	A financial institution must implement an appropriate access controls policy for the identification, authentication and authorisation of users (internal and external users such as third-party service providers). This must address both logical and physical technology access controls which are commensurate with the level of risk of unauthorised access to its technology systems	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)(h)(i)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficien t permissions are granted to legitimat e users to perform their roles; (h) limit and control the sharing of user ID and passwords across multiple users; and (i) control the use of generic user ID naming conventio ns in favour of more personally identifia ble IDs.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficien t permissions are granted to legitimat e users to perform their roles;	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficien t permissions are granted to legitimat e users to perform their roles;	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficient permissions are granted to legitimate users to perform their roles;	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficien t permissions are granted to legitimat e users to perform their roles;	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficient permissions are granted to legitimate users to perform their roles;	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficient permissions are granted to legitimate users to perform their roles;	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
10.53(b)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (b) employ "least privilege" access rights or on a 'need-to-have' basis where only the minimum sufficient permissions are granted to legitimate users to perform their roles;	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(c)(f)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (c) employ time-bound access rights which restrict access to a specific period including access rights granted to service providers ; (f) adopt stronger authentication for critical activities including for remote access	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
10.53(f)(h)	In observing paragraph 10.52, a financial institution should consider the following principles in its access control policy: (f) adopt stronger authentic ation for critical activities including for remote access; (h) limit and control the sharing of user ID and passwords across multiple users	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protectio n on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(f)(h)	In observing paragraph 10.54, a financial institution should consider the following principles in its access control policy: (f) adopt stronger authentic ation for critical activities including for remote access; (h) limit and control the sharing of user ID and passwords across multiple users	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.53(f)(h)	In observing paragraph 10.54, a financial institution should consider the following principles in its access control policy: (f) adopt stronger authentic ation for critical activities including for remote access; (h) limit and control the sharing of user ID and passwords across multiple users	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.54	A financial institution must employ robust authentication processes to ensure the authenticity of identities in use. Authentication mechanisms shall be commensurate with the criticality of the functions and adopt at least one or more of these three basic authentication factors, namely, something the user knows (for example password, PIN), something the user possesses (for example smart card, security device) and something the user is (for example biometric characteristics, such as a fingerprint or retinal pattern).	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
10.54	A financial institution must employ robust authentication processes to ensure the authenticity of identities in use. Authentication mechanisms shall be commensurate with the criticality of the functions and adopt at least one or more of these three basic authentication factors, namely, something the user knows (for example password, PIN), something the user possesses (for example smart card, security device) and something the user is (for example biometric characteristics, such as a fingerprint or retinal pattern).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.54	A financial institution must employ robust authentication processes to ensure the authenticity of identities in use. Authentication mechanisms shall be commensurate with the criticality of the functions and adopt at least one or more of these three basic authentication factors, namely, something the user knows (for example password, PIN), something the user possesses (for example smart card, security device) and something the user is (for example biometric characteristics, such as a fingerprint or retinal pattern).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.55	A financial instituti on shall periodically review and adapt its password practices to enhance resilienc e against evolving attacks. This includes the effective and secure generation of passwords. There must be appropriate controls in place to check the strength of the passwords created.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.56	Authentication methods that depend on more than one factor typically are more difficult to compromise than a single factor system. In view of this, financial instituti ons are encourage d to properly design and implement (especially in high-risk or 'single sign-on' systems) multi-factor authentication (MFA) that are more reliable and provide stronger fraud deterrents	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protectio n on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
10.56	Authentication methods that depend on more than one factor typically are more difficult to compromise than a single factor system. In view of this, financial instituti ons are encourage d to properly design and implement (especially in high-risk or 'single sign-on' systems) multi-factor authentication (MFA) that are more reliable and provide stronger fraud deterrents	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.56	Authentication methods that depend on more than one factor typically are more difficult to compromise than a single factor system. In view of this, financial instituti ons are encourage d to properly design and implement (especially in high-risk or 'single sign-on' systems) multi-factor authentication (MFA) that are more reliable and provide stronger fraud deterrents	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial instituti on must ensure (a) access controls to enterprise-wide systems are effective ly managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.59	A financial institution must ensure (a) access controls to enterprise-wide systems are effectively managed and monitored; and (b) user activities in critical systems are logged for audit and investigations. Activity logs must be maintained for at least three years and regularly reviewed in a timely manner.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
10.60	In fulfilling the requirement under paragraph 10.59, large financial institutions are required to (a) deploy an identity access management system to effectively manage and monitor user access to enterpris e-wide systems; and (b) deploy automated audit tools to flag any anomalies.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
10.60	In fulfilling the requirement under paragraph 10.61, large financial institutions are required to (a) deploy an identity access management system to effectively manage and monitor user access to enterpris e-wide systems; and (b) deploy automated audit tools to flag any anomalies.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.60	In fulfilling the requirement under paragraph 10.61, large financial institutions are required to (a) deploy an identity access management system to effectively manage and monitor user access to enterpris e-wide systems; and (b) deploy automated audit tools to flag any anomalies.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
10.61	A financial institution must ensure that critical systems are not running on outdated systems with known security vulnerabilities or end-of-life (EOL) technology systems. In this regard, a financial institution must clearly assign responsibilities to identified functions: (a) to continuously monitor and implement latest patch releases in a timely manner; and (b) identify critical technology systems that are approaching EOL for further remedial action.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.61	A financial institution must ensure that critical systems are not running on outdated systems with known security vulnerabilities or end-of-life (EOL) technology systems. In this regard, a financial institution must clearly assign responsibilities to identified functions: (a) to continuously monitor and implement latest patch releases in a timely manner; and (b) identify critical technology systems that are approaching EOL for further remedial action.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.61	A financial institution must ensure that critical systems are not running on outdated systems with known security vulnerabilities or end-of-life (EOL) technology systems. In this regard, a financial institution must clearly assign responsibilities to identified functions: (a) to continuously monitor and implement latest patch releases in a timely manner; and (b) identify critical technology systems that are approaching EOL for further remedial action.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
10.61	A financial institution must ensure that critical systems are not running on outdated systems with known security vulnerabilities or end-of-life (EOL) technology systems. In this regard, a financial institution must clearly assign responsibilities to identified functions: (a) to continuously monitor and implement latest patch releases in a timely manner; and (b) identify critical technology systems that are approaching EOL for further remedial action.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
10.61	A financial institution must ensure that critical systems are not running on outdated systems with known security vulnerabilities or end-of-life (EOL) technology systems. In this regard, a financial institution must clearly assign responsibilities to identified functions: (a) to continuously monitor and implement latest patch releases in a timely manner; and (b) identify critical technology systems that are approaching EOL for further remedial action.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
10.64(a)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
10.64(a)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
10.64(a)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (a) confidentiality and integrity of customer and counterparty information and transactions	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
10.64(b)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
10.64(b)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	nlb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your NetworkLoad Balancers (NLBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(b)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (b) reliability of services delivered from channels and devices with minimum disruption to services	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transacti ons	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(d)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (d) sufficient audit trail and monitoring of anomalous transactions	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial instituti on must implement robust technolog y security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
10.64(e)	A financial institution must implement robust technology security controls in providing digital services which assure the following: (e) ability to identify and revert to the recovery point prior to incident or service disruption	s3-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Simple Storage Service (S3) buckets are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.7	A financial institution must deploy effective tools to support the continuous and proactive monitoring and timely detection of anomalous activities in its technology infrastructure. The scope of monitoring must cover all critical systems including the supporting infrastructure.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.7	A financial institution must deploy effective tools to support the continuous and proactive monitoring and timely detection of anomalous activities in its technology infrastructure. The scope of monitoring must cover all critical systems including the supporting infrastructure.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
11.8	A financial institution must ensure that its cybersecurity operations continuously prevent and detect any potential compromise of its security controls or weakening of its security posture. For large financial institutions, this must include performing a quarterly vulnerability assessment of external and internal network components that support all critical systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.8	A financial institution must ensure that its cybersecurity operations continuously prevent and detect any potential compromise of its security controls or weakening of its security posture. For large financial institutions, this must include performing a quarterly vulnerability assessment of external and internal network components that support all critical systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
11.18(c)(f)	The SOC must be able to perform the following functions : (c) vulnerability management; (f) provision of situation al awareness to detect adversaries and threats including threat intellige nce analysis and operations, and monitoring indicator s of compromise (IOC). This includes advanced behaviour al analysis to detect signature-less and file-less malware and to identify anomalies that may pose security threats including at endpoints and network layers.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.18(c)(f)	The SOC must be able to perform the following functions : (c) vulnerability management; (f) provision of situational awareness to detect adversaries and threats including threat intelligence analysis and operations, and monitoring indicators of compromise (IOC). This includes advanced behavioural analysis to detect signature-less and file-less malware and to identify anomalies that may pose security threats including at endpoints and network layers.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.18(c)(f)	The SOC must be able to perform the following functions : (c) vulnerability management; (f) provision of situational awareness to detect adversaries and threats including threat intelligence analysis and operations, and monitoring indicators of compromise (IOC). This includes advanced behavioural analysis to detect signature-less and file-less malware and to identify anomalies that may pose security threats including at endpoints and network layers.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.1	Conduct periodic review on the configuration and rules settings for all security devices. Use automated tools to review and monitor changes to configuration and rules settings.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.1	Conduct periodic review on the configuration and rules settings for all security devices. Use automated tools to review and monitor changes to configuration and rules settings.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.5(b)	Ensure security controls for server-to-server external network connections include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Appendix 5.5(b)	Ensure security controls for server-to-server external network connections include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.5(b)	Ensure security controls for server-to-server external network connections include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
Appendix 5.5(b)	Ensure security controls for server-to-server external network connections include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.5(b)	Ensure security controls for server-to-server external network connectio ns include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Appendix 5.5(b)	Ensure security controls for server-to-server external network connectio ns include the following: (b) use of secure tunnels such as Transport Layer Security (TLS) and Virtual Private Network (VPN) IPSec	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.5(c)	Ensure security controls for server-to-server external network connections include the following : (c) deploying staging servers with adequate perimeter defences and protection such as firewall, IPS and antivirus.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
Appendix 5.5(c)	Ensure security controls for server-to-server external network connections include the following : (c) deploying staging servers with adequate perimeter defences and protection such as firewall, IPS and antivirus.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.5(c)	Ensure security controls for server-to-server external network connections include the following : (c) deploying staging servers with adequate perimeter defences and protection such as firewall, IPS and antivirus.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 5.6	Ensure security controls for remote access to server include the following : (a) restrict access to only hardened and locked down end-point devices; (b) use secure tunnels such as TLS and VPN IPSec; (c) deploy 'gateway' server with adequate perimeter defences and protection such as firewall, IPS and antivirus; and (d) close relevant ports immediately upon expiry of remote access.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (a)	A financial institution should design a robust cloud architecture and ensure such design is in accordance with the relevant international standards for the intended application.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
Appendix 10 Part B - 1 (b)	A financial institution is encouraged to adopt zero-trust principles to provide a cyber resilient architecture by adopting an "assume breach" mindset, layering defense-in-depth through micro-segmentation, "deny-by-default", "least privilege" access rights, and conducting deep inspection and continuous validation where applicable.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (b)	A financial institution is encouraged to adopt zero-trust principles to provide a cyber resilient architecture by adopting an "assume breach" mindset, layering defense-in-depth through micro-segmentation, "deny-by-default", "least privilege" access rights, and conducting deep inspection and continuous validation where applicable.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (b)	A financial institution is encouraged to adopt zero-trust principles to provide a cyber resilient architecture by adopting an "assume breach" mindset, layering defense-in-depth through micro-segmentation, "deny-by-default", "least privilege" access rights, and conducting deep inspection and continuous validation where applicable.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (b)	A financial institution is encouraged to adopt zero-trust principles to provide a cyber resilient architecture by adopting an "assume breach" mindset, layering defense-in-depth through micro-segmentation, "deny-by-default", "least privilege" access rights, and conducting deep inspection and continuous validation where applicable.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (c)	A financial institution should use the latest network architecture approach and appropriate network design concept and solutions for managing and monitoring granular network security and centralized network provision in managing complexity of the cloud network environment.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Appendix 10 Part B - 1 (c)	A financial institution should use the latest network architecture approach and appropriate network design concept and solutions for managing and monitoring granular network security and centralized network provision in managing complexity of the cloud network environment.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (d)	A financial institution should establish and utilise secure and encrypted communication channels for migrating physical servers, applications, or data to the cloud platforms.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Appendix 10 Part B - 1 (d)	A financial institution should establish and utilise secure and encrypted communication channels for migrating physical servers, applications, or data to the cloud platforms.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (f) i)	The increasing use of applicati on programming interfaces (API) by financial instituti on to interconn ect with external application service providers could achieve efficiency in new service delivery. However, this may increase the cyber-attack surface and any mismanage ment may amplify the impact of an information security incident. A financial institution should ensure its APIs are subject to rigorous management and control mechanism s which include the following: i) APIs should be designed for service resilienc e to avoid the risk of single points of failure and configure d securely with appropriate access controls;	api-gwv2-authoriza tion-type-configured	Ensure your Amazon API Gateway v2 API route has an authorization type set to prevent unauthorized access to the underlying backend resources.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (f) ii)	The increasing use of applicati on programming interfaces (API) by financial instituti on to interconn ect with external application service providers could achieve efficiency in new service delivery. However, this may increase the cyber-attack surface and any mismanage ment may amplify the impact of an information security incident. A financial institution should ensure its APIs are subject to rigorous management and control mechanism s which include the following: ii) APIs should be tracked and monitored against cyber-att acks with adequate incident response measures and are de-commissioned on a	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
	timely basis when no longer in use.		

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 1 (f) ii)	The increasing use of applicati on programming interfaces (API) by financial instituti on to interconn ect with external application service providers could achieve efficiency in new service delivery. However, this may increase the cyber-attack surface and any mismanage ment may amplify the impact of an information security incident. A financial institution should ensure its APIs are subject to rigorous management and control mechanism s which include the following: ii) APIs should be tracked and monitored against cyber-att acks with adequate incident response measures and are de-commissioned on a	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
	timely basis when no longer in use.		
Appendix 10 Part B - 2 (b) ii)	A financial institution should continuously leverage enhanced cloud capabilities to improve the security of the cloud services and financial institutions are, among others, encouraged to: ii) use immutable infrastructure practices for deployment of services to reduce the risk of failure by creating a new environment with the latest stable version of the software. The on-going monitoring of the cloud environment should include automating the detection of changes to immutable infrastructure to improve compliance review and combat evolving cyber-attacks	cloudformation-stack-notification-check	To detect unintended changes to the underlying AWS resources, ensure your CloudFormation stack is configured to send event notifications to an Amazon SNS topic.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 3 (b) vi)	A financial institution should ensure virtual machine and container images are configured, hardened, and monitored appropriately. This includes the following: vi) stored images are subjected to security monitoring from unauthorised access and changes.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (a) i)	As part of an effective recovery capability, financial institutions should ensure existing backup and recovery procedures are extended to cover cloud services, which includes the following: i) define and formalise backup and recovery strategy at the planning stage of cloud adoption;	s3-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Simple Storage Service (S3) buckets are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (b)	A financial institution should ensure backup and restoration procedures are periodically tested to validate recovery capabilities. The frequency of backup procedures should be commensurate with the criticality of the system and recovery point objective (RPO) of the system. Remedial actions should be taken promptly by the financial institution for unsuccessful backups.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (c) i)	A financial institution should ensure sufficient backup and recovery of virtual machine and container including backup configuration settings (for IaaS and PaaS, where relevant), which includes the following: i) ensure the capability to restore a virtual machine and container at point-in-time as specified by the the business recovery objectives;	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial instituti on should assess the resilience requireme nts of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availabil ity in the extreme adverse scenarios . Financial instituti ons should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentra tion risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure productio n data centres have redundant capacity in different availability zones;	autoscaling-multiple-az	To ensure high availability, ensure your Auto Scaling group is configure d to span multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial instituti on should assess the resilience requireme nts of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availabil ity in the extreme adverse scenarios . Financial instituti ons should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentra tion risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure productio n data centres have redundant capacity in different availability zones;	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, container s, and IP addresses , in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial instituti on should assess the resilience requireme nts of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availabil ity in the extreme adverse scenarios . Financial instituti ons should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentra tion risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure productio n data centres have redundant capacity in different availability zones;	lambda-vpc-multi-az-check	If your AWS Lambda function is configure d to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availability Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial instituti on should assess the resilience requireme nts of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availabil ity in the extreme adverse scenarios . Financial instituti ons should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentra tion risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure productio n data centres have redundant capacity in different availability zones;	nlb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your NetworkLoad Balancers (NLBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial institution should assess the resilience requirements of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availability in the extreme adverse scenarios. Financial institutions should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentration risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure production data centres have redundant capacity in different availability zones;	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 5 (d) i)	A financial institution should assess the resilience requirements of the cloud services and identify appropriate measures that commensurate with the criticality of the system, to ensure service availability in the extreme adverse scenarios. Financial institutions should consider a risk-based approach and progressively adopt appropriate mitigating controls to ensure service availability and mitigate concentration risk. Amongst the viable options are: i) leverage cloud services' high availability and redundancy features to ensure production data centres have redundant capacity in different availability zones;	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	eks-secrets-encrypted	To help protect data at rest, ensure that your Amazon Elastic Kubernetes Service (EKS) clusters are configured to have Kubernetes secrets encrypted. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
Appendix 10 Part B - 8 (a)	A financial institution should implement appropriate and relevant encryption techniques to protect the confidentiality and integrity of sensitive data stored on the cloud.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (d)	As the usage of cloud adoption increases , managing many encryption keys used for protectin g data has become more complex and may introduce new challenges for financial institutions. A financial instituti on should adopt a comprehensive and centralized approach to key managemen t including the use of centralised key management system that can handle generations, storage and distribution of keys in a secure and scalable manner.	cmk-backing-key-ro tation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 8 (d)	As the usage of cloud adoption increases , managing many encryption keys used for protectin g data has become more complex and may introduce new challenges for financial institutions. A financial instituti on should adopt a comprehensive and centralized approach to key managemen t including the use of centralised key management system that can handle generations, storage and distribution of keys in a secure and scalable manner.	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) ii)	The management plane is a key security difference between traditional infrastru cture and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deploymen t. In view of this, financial Instituti ons should ensure the use of strong controls for accessing the management plane which may include the following : ii) implement "least privilege" and strong multi-factor authentication (MFA) for example, strong password, soft token, privileged access management tool and maker-checker functions;	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) ii)	The management plane is a key security difference between traditional infrastructure and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deployment. In view of this, financial Institutions should ensure the use of strong controls for accessing the management plane which may include the following: ii) implement "least privilege" and strong multi-factor authentication (MFA) for example, strong password, soft token, privileged access management tool and maker-checker functions;	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) ii)	The management plane is a key security difference between traditional infrastructure and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deployment. In view of this, financial Institutions should ensure the use of strong controls for accessing the management plane which may include the following: ii) implement "least privilege" and strong multi-factor authentication (MFA) for example, strong password, soft token, privileged access management tool and maker-checker functions;	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) ii)	The management plane is a key security difference between traditional infrastru cture and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deploymen t. In view of this, financial Instituti ons should ensure the use of strong controls for accessing the management plane which may include the following : ii) implement "least privilege" and strong multi-factor authentication (MFA) for example, strong password, soft token, privileged access management tool and maker-checker functions;	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) iii)	The management plane is a key security difference between traditional infrastructure and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deployment. In view of this, financial Institutions should ensure the use of strong controls for accessing the management plane which may include the following: iii) employ granular entitlement allocation for privileged users;	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) iii)	The management plane is a key security difference between traditional infrastru cture and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deploymen t. In view of this, financial Instituti ons should ensure the use of strong controls for accessing the management plane which may include the following : iii) employ granular entitlement allocatio n for privileged users;	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) iv)	The management plane is a key security difference between traditional infrastru cture and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deploymen t. In view of this, financial Institutions should ensure the use of strong controls for accessing the management plane which may include the following: iv) conduct continuou s monitoring of the activities performed by privileged users;	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 9 (a) iv)	The management plane is a key security difference between traditional infrastru cture and cloud computing where remote access is supported by default. This access layer could be prone to cyber-attacks thereby compromising the integrity of the entire cloud deploymen t. In view of this, financial Institutions should ensure the use of strong controls for accessing the management plane which may include the following: iv) conduct continuou s monitoring of the activities performed by privileged users;	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 12 (a)	A financial instituti on should protect the data hosted in cloud services as required under the Data Loss Prevention section (paragraphs 11.14 to 11.16) of this policy document, including the expansion of the endpoint footprint if the financial instituti on allows its staff to use their own devices to access the sensitive data.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
Appendix 10 Part B - 12 (a)	A financial instituti on should protect the data hosted in cloud services as required under the Data Loss Prevention section (paragraphs 11.14 to 11.16) of this policy document, including the expansion of the endpoint footprint if the financial instituti on allows its staff to use their own devices to access the sensitive data.	macie-status-check	Amazon Macie is a data security service that uses machine learning (ML) and pattern matching to discover and help protect your sensitive data stored in Amazon Simple Storage Service (S3) buckets.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 14 (c) i)	A financial instituti on should consider the following additional measures in the developme nt of its CIRP: i) enhance its ability to detect security breach incidents to achieve effective incident managemen t, including the ability to detect data leakage on the dark web;	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
Appendix 10 Part B - 14 (c) i)	A financial institution should consider the following additional measures in the development of its CIRP: i) enhance its ability to detect security breach incidents to achieve effective incident management, including the ability to detect data leakage on the dark web;	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for BNM RMiT.

Operational Best Practices for Canadian Centre for Cyber Security (CCCS) Medium Cloud Control Profile

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom

AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Canadian Centre for Cyber Security (CCCS) Medium Cloud Control Profile and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more CCCS Medium Cloud Control Profile controls. A CCCS Medium Cloud Control Profile control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect

Control ID	Control Description	AWS Config Rule	Guidance
			access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(1)	AC-2(1) Account Management | Automated System Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(3)	AC-2(3) Account Management | Disable Inactive Accounts	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(3)	AC-2(3) Account Management | Disable Inactive Accounts	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2(4)	AC-2(4) Account Management | Automated Audit Actions	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.A	AC-2.A Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.B	AC-2.B Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.C	AC-2.C Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.D	AC-2.D Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.E	AC-2.E Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.F	AC-2.F Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.G	AC-2.G Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.H	AC-2.H Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.I	AC-2.I Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.J	AC-2.J Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-2.K	AC-2.K Account Management	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-3.A	AC-3.A Access Enforcement	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4(21)	AC-4(21) Information Flow Enforcement | Physical / Logical Separation of Information Flows	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-4.A	AC-4.A Information Flow Enforcement	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-5.A	AC-5.A Separation of Duties	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-5.A	AC-5.A Separation of Duties	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-5.A	AC-5.A Separation of Duties	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-5.A	AC-5.A Separation of Duties	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-5.A	AC-5.A Separation of Duties	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(1)	AC-6(1) Least Privilege | Authorize Access to Security Functions	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(1)	AC-6(1) Least Privilege | Authorize Access to Security Functions	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(1)	AC-6(1) Least Privilege | Authorize Access to Security Functions	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(1)	AC-6(1) Least Privilege | Authorize Access to Security Functions	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(1)	AC-6(1) Least Privilege | Authorize Access to Security Functions	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(2)	AC-6(2) Least Privilege | Non-Privileged Access for Non-Security Functions	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(2)	AC-6(2) Least Privilege | Non-Privileged Access for Non-Security Functions	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(2)	AC-6(2) Least Privilege | Non-Privileged Access for Non-Security Functions	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(2)	AC-6(2) Least Privilege | Non-Privileged Access for Non-Security Functions	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(2)	AC-6(2) Least Privilege | Non-Privileged Access for Non-Security Functions	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(5)	AC-6(5) Least Privilege | Privileged Accounts	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(5)	AC-6(5) Least Privilege | Privileged Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(5)	AC-6(5) Least Privilege | Privileged Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(5)	AC-6(5) Least Privilege | Privileged Accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(9)	AC-6(9) Least Privilege | Auditing Use of Privileged Functions	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(10)	AC-6(10) Least Privilege | Prohibit Non-Privileged Users from Executing Privileged Functions	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(10)	AC-6(10) Least Privilege | Prohibit Non-Privileged Users from Executing Privileged Functions	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(10)	AC-6(10) Least Privilege | Prohibit Non-Privileged Users from Executing Privileged Functions	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(10)	AC-6(10) Least Privilege | Prohibit Non-Privileged Users from Executing Privileged Functions	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6(10)	AC-6(10) Least Privilege | Prohibit Non-Privileged Users from Executing Privileged Functions	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-6.A	AC-6.A Least Privilege	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(1)	AC-17(1) Remote Access | Automated Monitoring / Control	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-AC-17(2)	AC-17(2) Remote Access | Protection of Confidentiality / Integrity using Encryption	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(3)	AC-17(3) Remote Access | Managed Access Control Points	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(4)	AC-17(4) Remote Access | Privileged Commands / Access	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(4)	AC-17(4) Remote Access | Privileged Commands / Access	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17(4)	AC-17(4) Remote Access | Privileged Commands / Access	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.A	AC-17.A Remote Access	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.AA	AC-17.AA Remote Access	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AC-17.B	AC-17.B Remote Access	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.A	AU-2.A Audit Events	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.B	AU-2.B Audit Events	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.C	AU-2.C Audit Events	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-2.D	AU-2.D Audit Events	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3(1)	AU-3(1) Content of Audit Records | Additional Audit Information	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-3.A	AU-3.A Content of Audit Records	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-5.A	AU-5.A Response to Audit Processing Failures	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-5.B	AU-5.B Response to Audit Processing Failures	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(1)	AU-6(1) Audit Review, Analysis, and Reporting | Process Integration	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-6(3)	AU-6(3) Audit Review, Analysis, and Reporting | Correlate Audit Repositories	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-7(1)	AU-7(1) Audit Reduction and Report Generation | Automatic Processing	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-8.B	AU-8.B Time Stamps	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-9(2)	AU-9(2) Protection of Audit Information | Audit Backup on Separate Physical Systems / Components	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-9(2)	AU-9(2) Protection of Audit Information | Audit Backup on Separate Physical Systems / Components	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-AU-9(2)	AU-9(2) Protection of Audit Information | Audit Backup on Separate Physical Systems / Components	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-9.A	AU-9.A Protection of Audit Information	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CCCS-fPBMM-AU-9.A	AU-9.A Protection of Audit Information	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-9.A	AU-9.A Protection of Audit Information	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CCCS-fPBMM-AU-11.A	AU-11.A Audit Record Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-11.B	AU-11.B Audit Record Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
CCCS-fPBMM-AU-11.C	AU-11.C Audit Record Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.A	AU-12.A Audit Generation	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-AU-12.C	AU-12.C Audit Generation	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-3(5)	CA-3(5) System Interconnections | Restrictions on External Network Connections	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.A	CA-7.A Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.B	CA-7.B Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.C	CA-7.C Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.D	CA-7.D Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.E	CA-7.E Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.F	CA-7.F Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	api-gw-xray-enabled	AWS X-Ray collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportuni ties for optimizat ion. Ensure X-Ray is enables so you can see detailed informati on not only about the request and response, but also about calls that your application makes to downstream AWS resources, microserv ices, databases and HTTP web APIs.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-7.G	CA-7.G Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CA-9.A	CA-9.A Internal System Connections	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-2.A	CM-2.A Baseline Configuration	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.A	CM-3.A Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.A	CM-3.A Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.B	CM-3.B Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.B	CM-3.B Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.C	CM-3.C Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.C	CM-3.C Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.D	CM-3.D Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.D	CM-3.D Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.E	CM-3.E Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.E	CM-3.E Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.F	CM-3F Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.F	CM-3F Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.G	CM-3.G Configuration Change Control	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-3.G	CM-3.G Configuration Change Control	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(1)	CM-5(1) Access Restrictions for Change | Automated Access Enforcement / Auditing	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5(5)	CM-5(5) Access Restrictions for Change | Limit Production / Operational Privileges	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-5.A	CM-5.A Access Restrictions for Change	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6(1)	CM-6(1) Configuration Settings | Automated Central Management / Application / Verification	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6(1)	CM-6(1) Configuration Settings | Automated Central Management / Application / Verification	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6(1)	CM-6(1) Configuration Settings | Automated Central Management / Application / Verification	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.A	CM-6.A Configuration Settings	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.B	CM-6.B Configuration Settings	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.C	CM-6.C Configuration Settings	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-6.D	CM-6.D Configuration Settings	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
CCCS-fPBMM-CM-7.A	CM-7.A Least Functionality	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-7.A	CM-7.A Least Functionality	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-7.B	CM-7.B Least Functionality	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-7.B	CM-7.B Least Functionality	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(1)	CM-8(1) Information System Component Inventory | Updates During Installations / Removals	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(1)	CM-8(1) Information System Component Inventory | Updates During Installations / Removals	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(2)	CM-8(2) Information System Component Inventory | Automated Maintenance	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(2)	CM-8(2) Information System Component Inventory | Automated Maintenance	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(3)	CM-8(3) Information System Component Inventory | Automated Unauthorized Component Detection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(3)	CM-8(3) Information System Component Inventory | Automated Unauthorized Component Detection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8(3)	CM-8(3) Information System Component Inventory | Automated Unauthorized Component Detection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-CM-8(3)	CM-8(3) Information System Component Inventory | Automated Unauthorized Component Detection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.A	CM-8.A Information System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.A	CM-8.A Information System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.B	CM-8.B Information System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.B	CM-8.B Information System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.C	CM-8.C Information System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.C	CM-8.C Information System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.D	CM-8.D Information System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.D	CM-8.D Information System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.E	CM-8.E Information System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CM-8.E	CM-8.E Information System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(5)	CP-2(5) Contingency Plan | Continue Essential Missions / Business Functions	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2(6)	CP-2(6) Contingency Plan | Alternate Processing / Storage Site	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.A	CP-2.A Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.B	CP-2.B Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.C	CP-2.C Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.D	CP-2.D Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.E	CP-2.E Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.F	CP-2.F Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-2.G	CP-2.G Contingency Plan	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-6(1)	CP-6(1) Alternate Storage Site | Separation from Primary Site	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-6(2)	CP-6(2) Alternate Storage Site | Recovery Times / Point Objectives	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-6.A	CP-6.A Alternate Storage Site	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-6.B	CP-6.B Alternate Storage Site	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	backup-recovery-po int-minimum-retent ion-check	To help with data back-up processes , ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. This rule allows you to set the requiredRetentionD ays (config default: 35) parameter. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/ O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	ebs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	efs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	rds-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9(3)	CP-9(3) Informati on System Backup | Separate Storage for Critical Information	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9(7)	CP-9(7) Information System Backup | Dual Authorization	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.
CCCS-fPBMM-CP-9(7)	CP-9(7) Information System Backup | Dual Authorization	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9.A	CP-9.A Information System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9.AA	CP-9.AA Information System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9.B	CP-9.B Information System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9.C	CP-9.C Information System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-9.D	CP-9.D Information System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-CP-10.A	CP-10.A Information System Recovery and Reconstitution	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(1)	IA-2(1) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(1)	IA-2(1) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(1)	IA-2(1) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-IA-2(3)	IA-2(3) Identification and Authentication (Organizational Users) | Local Access to Privileged Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(3)	IA-2(3) Identification and Authentication (Organizational Users) | Local Access to Privileged Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(3)	IA-2(3) Identification and Authentication (Organizational Users) | Local Access to Privileged Accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-IA-2(8)	IA-2(8) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts - Replay Resistant	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(8)	IA-2(8) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts - Replay Resistant	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(8)	IA-2(8) Identification and Authentication (Organizational Users) | Network Access to Privileged Accounts - Replay Resistant	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-IA-2(11)	IA-2(11) Identification and Authentication (Organizational Users) | Remote Access - Separate Device	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(11)	IA-2(11) Identification and Authentication (Organizational Users) | Remote Access - Separate Device	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2(11)	IA-2(11) Identification and Authentication (Organizational Users) | Remote Access - Separate Device	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2.A	IA-2.A Identification and Authentication (Organizational Users)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
CCCS-fPBMM-IA-2.A	IA-2.A Identification and Authentication (Organizational Users)	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2.A	IA-2.A Identification and Authentication (Organizational Users)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-2.A	IA-2.A Identification and Authentication (Organizational Users)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4(4)	IA-4(4) Identifier Management | Identify User Status	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.A	IA-4.A Identifier Management	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.A	IA-4.A Identifier Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.A	IA-4.A Identifier Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.B	IA-4.B Identifier Management	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.B	IA-4.B Identifier Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.B	IA-4.B Identifier Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.C	IA-4.C Identifier Management	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.C	IA-4.C Identifier Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.C	IA-4.C Identifier Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.D	IA-4.D Identifier Management	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.D	IA-4.D Identifier Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.D	IA-4.D Identifier Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.E	IA-4.E Identifier Management	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.E	IA-4.E Identifier Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-4.E	IA-4.E Identifier Management	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(1)	IA-5(1) Authenticator Management | Password-Based Authentication	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
CCCS-fPBMM-IA-5(2)	IA-5(2) Authenticator Management | PKI-Based Authentication	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(2)	IA-5(2) Authenticator Management | PKI-Based Authentication	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(4)	IA-5(4) Authenticator Management | Automated Support for Password Strength Determination	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(8)	IA-5(8) Authenticator Management | Multiple Information System Accounts	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(8)	IA-5(8) Authenticator Management | Multiple Information System Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5(8)	IA-5(8) Authenticator Management | Multiple Information System Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.A	IA-5.A Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.A	IA-5.A Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.A	IA-5.A Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.A	IA-5.A Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.B	IA-5.B Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.B	IA-5.B Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.B	IA-5.B Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.B	IA-5.B Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.C	IA-5.C Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.C	IA-5.C Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.C	IA-5.C Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.C	IA-5.C Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.D	IA-5.D Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.D	IA-5.D Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.D	IA-5.D Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.D	IA-5.D Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.E	IA-5.E Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.E	IA-5.E Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.E	IA-5.E Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.E	IA-5.E Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.F	IA-5.F Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.F	IA-5.F Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.F	IA-5.F Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.F	IA-5.F Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.G	IA-5.G Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.G	IA-5.G Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.G	IA-5.G Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.G	IA-5.G Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.H	IA-5.H Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.H	IA-5.H Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.H	IA-5.H Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.H	IA-5.H Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.I	IA-5.I Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.I	IA-5.I Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.I	IA-5.I Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.I	IA-5.I Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.J	IA-5.J Authenticator Management	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

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			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
CCCS-fPBMM-IA-5.J	IA-5.J Authenticator Management	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.J	IA-5.J Authenticator Management	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-IA-5.J	IA-5.J Authenticator Management	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CCCS-fPBMM-IR-6(1)	IR-6(1) Incident Reporting | Automated Reporting	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-3.A	MA-3.A Maintenance Tools	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-3.A	MA-3.A Maintenance Tools	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MA-4(1)	MA-4(1) Nonlocal Maintenance | Auditing and Review	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-MP-2.A	MP-2.A Media Access	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
CCCS-fPBMM-RA-5.A	RA-5.A Vulnerability Scanning	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-RA-5.B	RA-5.B Vulnerability Scanning	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-RA-5.C	RA-5.C Vulnerability Scanning	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-RA-5.D	RA-5.D Vulnerability Scanning	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-RA-5.E	RA-5.E Vulnerability Scanning	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SA-10(1)	SA-10(1) Developer Configuration Management | Software / Firmware Integrity Verification	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-5.A	SC-5.A Denial of Service Protection	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
CCCS-fPBMM-SC-5.A	SC-5.A Denial of Service Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-6.A	SC-6.A Resource Availability	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(3)	SC-7(3) Boundary Protection | Access Points	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(4)	SC-7(4) Boundary Protection | External Telecommunications Services	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(5)	SC-7(5) Boundary Protection | Deny by Default / Allow by Exception	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(5)	SC-7(5) Boundary Protection | Deny by Default / Allow by Exception	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(5)	SC-7(5) Boundary Protection | Deny by Default / Allow by Exception	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(5)	SC-7(5) Boundary Protection | Deny by Default / Allow by Exception	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7(7)	SC-7(7) Boundary Protection | Prevent Split Tunneling for Remote Devices	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.A	SC-7.A Boundary Protection	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.B	SC-7.B Boundary Protection	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-7.C	SC-7.C Boundary Protection	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8(1)	SC-8(1) Transmission Confidentiality and Integrity | Cryptographic or Alternate Physical Protection	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-8.A	SC-8.A Transmission Confidentiality and Integrity	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-12(1)	SC-12(1) Cryptographic Key Establishment and Management | Availability	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
CCCS-fPBMM-SC-12(2)	SC-12(2) Cryptographic Key Establishment and Management | Symmetric Keys	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-12(2)	SC-12(2) Cryptographic Key Establishment and Management | Symmetric Keys	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
CCCS-fPBMM-SC-12.A	SC-12.A Cryptographic Key Establishment and Management	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-12.A	SC-12.A Cryptographic Key Establishment and Management	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-13.A	SC-13.A Cryptographic Protection	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-22.A	SC-22.A Architecture and Provisioning for Name / Address Resolution Service	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-23.A	SC-23.A Session Authenticity	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28(1)	SC-28(1) Protection of Information at Rest | Cryptographic Protection	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
CCCS-fPBMM-SC-28.A	SC-28.A Protection of Information at Rest	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(2)	SI-2(2) Flaw Remediation | Automated Flaw Remediation Status	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2(3)	SI-2(3) Flaw Remediation | Time to Remediate Flaws / Benchmarks for Corrective Actions	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.A	SI-2.A Flaw Remediation	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.B	SI-2.B Flaw Remediation	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.C	SI-2.C Flaw Remediation	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-2.D	SI-2.D Flaw Remediation	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3(1)	SI-3(1) Malicious Code Protection | Central Management	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-3(7)	SI-3(7) Malicious Code Protection | Non Signature-Based Detection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.A	SI-3.A Malicious Code Protection	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.A	SI-3.A Malicious Code Protection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.A	SI-3.A Malicious Code Protection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.A	SI-3.A Malicious Code Protection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-3.A	SI-3.A Malicious Code Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.B	SI-3.B Malicious Code Protection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.B	SI-3.B Malicious Code Protection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.B	SI-3.B Malicious Code Protection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-3.B	SI-3.B Malicious Code Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.C	SI-3.C Malicious Code Protection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.C	SI-3.C Malicious Code Protection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.C	SI-3.C Malicious Code Protection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-3.C	SI-3.C Malicious Code Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.D	SI-3.D Malicious Code Protection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.D	SI-3.D Malicious Code Protection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-3.D	SI-3.D Malicious Code Protection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CCCS-fPBMM-SI-3.D	SI-3.D Malicious Code Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(1)	SI-4(1) Information System Monitoring | System-Wide Intrusion Detection System	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(1)	SI-4(1) Information System Monitoring | System-Wide Intrusion Detection System	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(2)	SI-4(2) Information System Monitoring | Automated Tools for Real-Time Analysis	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(2)	SI-4(2) Information System Monitoring | Automated Tools for Real-Time Analysis	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(4)	SI-4(4) Information System Monitoring | Inbound and Outbound Communications Traffic	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4(4)	SI-4(4) Information System Monitoring | Inbound and Outbound Communications Traffic	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(5)	SI-4(5) Information System Monitoring | System-Generated Alerts	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(11)	SI-4(11) Information System Monitoring | Analyze Communications Traffic Anomalies	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(11)	SI-4(11) Information System Monitoring | Analyze Communications Traffic Anomalies	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(16)	SI-4(16) Information System Monitoring | Correlate Monitoring Information	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(16)	SI-4(16) Information System Monitoring | Correlate Monitoring Information	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(20)	SI-4(20) Information System Monitoring | Privileged User	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(23)	SI-4(23) Information System Monitoring | Host-Based Devices	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4(23)	SI-4(23) Information System Monitoring | Host-Based Devices	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.A	SI-4.A Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.A	SI-4.A Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.A	SI-4.A Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.A	SI-4.A Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.A	SI-4.A Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.B	SI-4.B Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.B	SI-4.B Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.B	SI-4.B Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.B	SI-4.B Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.B	SI-4.B Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.C	SI-4.C Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.C	SI-4.C Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.C	SI-4.C Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.C	SI-4.C Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.C	SI-4.C Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.D	SI-4.D Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.D	SI-4.D Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.D	SI-4.D Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.D	SI-4.D Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.D	SI-4.D Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.E	SI-4.E Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.E	SI-4.E Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.E	SI-4.E Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.E	SI-4.E Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.E	SI-4.E Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.F	SI-4.F Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.F	SI-4.F Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.F	SI-4.F Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.F	SI-4.F Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.F	SI-4.F Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.G	SI-4.G Information System Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.G	SI-4.G Information System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.G	SI-4.G Information System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-4.G	SI-4.G Information System Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-4.G	SI-4.G Information System Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-5.A	SI-5.A Security Alerts, Advisories, and Directives	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-5.B	SI-5.B Security Alerts, Advisories, and Directives	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-5.C	SI-5.C Security Alerts, Advisories, and Directives	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CCCS-fPBMM-SI-5.D	SI-5.D Security Alerts, Advisories, and Directives	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-7(1)	SI-7(1) Software, Firmware, and Information Integrity | Integrity Checks	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-7(7)	SI-7(7) Software, Firmware, and Information Integrity | Integration of Detection and Response	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-7.A	SI-7.A Software, Firmware, and Information Integrity	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CCCS-fPBMM-SI-12.A	SI-12.A Information Handling and Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Template

The template is available on GitHub: Operational Best Practices for Canadian Centre for Cyber Security (CCCS) Medium Cloud Control Profile.

Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Amazon Web Services Foundation v1.4 Level 1 and AWS managed Config rules/AWS Config Process Checks. Each Config rule applies to a specific AWS resource, and relates to one or more CIS Amazon Web Services Foundation v1.4 Level 1 controls. A CIS Amazon Web Services Foundation v1.4 Level 1 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

For more information about process checks, see process-checks.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Maintain current contact details	account-contact-details-configured (process check)	Ensure the contact email and telephone number for AWS accounts are current and map to more than one individua l in your organizat ion. Within the My Account section of the console ensure correct information is specified in the Contact Informati on section. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_servic es/
1.2	Ensure security contact information is registered	account-security-c ontact-configured (Process Check)	Ensure the contact email and telephone number for the your organizations security team are current.

Control ID	Control Description	AWS Config Rule	Guidance
			Within the My Account section of the AWS Management Console ensure the correct information is specified in the Security section. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.4	Ensure no 'root' user access key exists	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
1.5	Ensure MFA is enabled for the 'root' user	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.7	Eliminate use of the 'root' user for administrative and daily tasks	root-account-regular-use (Process Check)	Ensure the use of the root account is avoided for everyday tasks. Within IAM, run a credential report to examine when the root user was last used. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.8	Ensure IAM password policy requires minimum length of 14 or greater	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.9	Ensure IAM password policy prevents password reuse	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.10	Ensure multi-factor authentication (MFA) is enabled for all users that have a console password	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1.11	Do not setup access keys during initial user setup for all users that have a console password	iam-user-console-and-api-access-at-creation (Process Check)	Ensure access keys are not setup during the initial user setup for all users that have a console password. For all users with console access, compare the user 'Creation time` to the Access Key `Created` date. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.12	Ensure credentials unused for 45 days or greater are disabled	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (CIS Standard value: 45). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.13	Ensure there is only one active access key available for any single user	iam-user-single-access-key (Process Check)	Ensure there is only one active access key available for any single user. For all users check that there is only one active key used within the Security Credentials tab for each user within IAM. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.14	Ensure access keys are rotated every 90 days or less	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.15	Ensure users Receive Permissions Only Through Groups	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
1.15	Ensure users Receive Permissions Only Through Groups	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
1.15	Ensure users Receive Permissions Only Through Groups	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1.16	Ensure IAM policies that allow full "*:*" administrative privileges are not attached	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1.17	Ensure a support role has been created to manage incidents with AWS Support	iam-policy-in-use	AWS Identity and Access Management (IAM) can help you manage access permissions and authorizations by ensuring that IAM policies are assigned to the appropriate users, roles, or groups. Restricting these policies also incorporates the principals of least privilege and separation of duties. This rule requires that you set the policyARN to arn:aws:iam::aws:policy/AWSSupportAccess, for incident management with AWS Support.

Control ID	Control Description	AWS Config Rule	Guidance
1.19	Ensure that all the expired SSL/TLS certificates stored in AWS IAM are removed	iam-expired-certificates (Process Check)	Ensure that all the expired SSL/TLS certificates stored in IAM are removed. From the command line with the installed AWS CLI run the 'AWS iam list-server-certificates' command and determine if there are any expired server certificates. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.20	Ensure that AWS IAM Access Analyzer is enabled	iam-access-analyzer-enabled (Process Check)	Ensure that IAM Access Analyzer is enabled. Within the IAM section of the console, select Access Analyzer and ensure that the STATUS is set to Active. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
2.1.3	Ensure MFA Delete is enable on S3 buckets	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Adding multi factor authentication (MFA) delete to an S3 bucket requires an additional factor of authentication in order to change the version state of your bucket or to delete and object version. MFA delete can add an additional layer of security in the event security credentials are compromised or unauthorized access is granted.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.5	Ensure that S3 Buckets are configure d with 'Block public access (bucket settings)'	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.5	Ensure that S3 Buckets are configure d with 'Block public access (bucket settings)'	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
2.2.1	Ensure EBS volume encryption is enabled	encrypted-volumes	Because senstive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.1	Ensure EBS volume encryption is enabled	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2.3.1	Ensure that encryption is enabled for RDS Instances	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.3.1	Ensure that encryption is enabled for RDS Instances	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Ensure CloudTrail is enabled in all regions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.4	Ensure CloudTrail trails are integrated with CloudWatch Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.6	Ensure S3 bucket access logging is enabled on the CloudTrail S3 bucket	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Ensure a log metric filter and alarm exist for unauthorized API calls	alarm-unauthorized-api-calls (Process Check)	Ensure a log metric filter and an alarm exists for unauthorized API calls. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.2	Ensure a log metric filter and alarm exist for Managemen t Console sign-in without MFA	alarm-sign-in-with out-mfa (Process Check)	Ensure a log metric filter and an alarm exists for AWS Management Console sign-in without Multi-Factor Authentic ation (MFA). For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_servic es/

Control ID	Control Description	AWS Config Rule	Guidance
4.3	Ensure a log metric filter and alarm exist for usage of 'root' account	alarm-root-account-use (Process Check)	Ensure a log metric filter and an alarm exists for usage of the root account. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.4	Ensure a log metric filter and alarm exist for IAM policy changes	alarm-iam-policy-change (Process Check)	Ensure a log metric filter and an alarm exists for IAM policy changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.5	Ensure a log metric filter and alarm exist for CloudTrail configuration changes	alarm-cloudtrail-config-change (Process Check)	Ensure a log metric filter and an alarm exists for AWS CloudTrail configuration changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.8	Ensure a log metric filter and alarm exist for S3 bucket policy changes	alarm-s3-bucket-policy-change (Process Check)	Ensure a log metric filter and an alarm exists for Amazon S3 bucket policy changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.12	Ensure a log metric filter and alarm exist for changes to network gateways	alarm-vpc-network-gateway-change (Process Check)	Ensure a log metric filter and an alarm exists for changes to network gateways. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.13	Ensure a log metric filter and alarm exist for route table changes	alarm-vpc-route-table-change (Process Check)	Ensure a log metric filter and an alarm exists for route table changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.14	Ensure a log metric filter and alarm exist for VPC changes	alarm-vpc-change (Process Check)	Ensure a log metric filter and an alarm exists for Amazon Virtual Private Cloud (VPC) changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.15	Ensure a log metric filter and alarm exists for AWS Organizations changes	alarm-organizations-change (Process Check)	Ensure a log metric filter and an alarm exists for AWS Organizations changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
5.1	Ensure no Network ACLs allow ingress from 0.0.0.0/0 to remote server administration ports	nacl-no-unrestricted-ssh-rdp	Ensure no network ACLs allow public ingress to the remote server administr ation ports. Within the VPC section of the console, ensure there are network ACLs with a source of '0.0.0.0/0' with allowing ports or port ranges including remote server admin ports. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Ensure no security groups allow ingress from 0.0.0.0/0 to remote server administration ports	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Ensure no security groups allow ingress from 0.0.0.0/0 to remote server administration ports	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (CIS Standard value: 3389). The actual values should reflect your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1.

Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Amazon Web Services Foundation v1.4 Level 2 and AWS managed Config rules/AWS Config Process Checks. Each Config rule applies to a specific AWS resource, and relates to one or more CIS Amazon Web Services Foundation v1.4 Level 2 controls. A CIS Amazon Web Services Foundation v1.4 Level 2 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

For more information about process checks, see process-checks.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Maintain current contact details	account-contact-details-configured (process check)	Ensure the contact email and telephone number for AWS accounts are current and map to more than one individua l in your organizat ion. Within the My Account section of the console ensure correct information is specified in the Contact Informati on section. For further details on the auditing

Control ID	Control Description	AWS Config Rule	Guidance
			of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.2	Ensure security contact information is registered	account-security-contact-configured (Process Check)	Ensure the contact email and telephone number for the your organizations security team are current. Within the My Account section of the AWS Management Console ensure the correct information is specified in the Security section. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.4	Ensure no 'root' user access key exists	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
1.5	Ensure MFA is enabled for the 'root' user	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.6	Ensure hardware MFA is enabled for the 'root' user account	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.7	Eliminate use of the 'root' user for administrative and daily tasks	root-account-regular-use (Process Check)	Ensure the use of the root account is avoided for everyday tasks. Within IAM, run a credential report to examine when the root user was last used. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.8	Ensure IAM password policy requires minimum length of 14 or greater	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.9	Ensure IAM password policy prevents password reuse	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.10	Ensure multi-factor authentication (MFA) is enabled for all users that have a console password	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1.11	Do not setup access keys during initial user setup for all users that have a console password	iam-user-console-and-api-access-at-creation (Process Check)	Ensure access keys are not setup during the initial user setup for all users that have a console password. For all users with console access, compare the user 'Creation time` to the Access Key `Created` date. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.12	Ensure credentials unused for 45 days or greater are disabled	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (CIS Standard value: 45). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.13	Ensure there is only one active access key available for any single user	iam-user-single-access-key (Process Check)	Ensure there is only one active access key available for any single user. For all users check that there is only one active key used within the Security Credentials tab for each user within IAM. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.14	Ensure access keys are rotated every 90 days or less	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.15	Ensure users Receive Permissions Only Through Groups	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
1.15	Ensure users Receive Permissions Only Through Groups	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
1.15	Ensure users Receive Permissions Only Through Groups	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1.16	Ensure IAM policies that allow full "*:*" administrative privileges are not attached	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1.17	Ensure a support role has been created to manage incidents with AWS Support	iam-policy-in-use	AWS Identity and Access Managemen t (IAM) can help you manage access permissions and authorizations by ensuring that IAM policies are assigned to the appropria te users, roles, or groups. Restricti ng these policies also incorporates the principals of least privilege and separation of duties. This rule requires that you set the policyARN to arn:aws:iam::aws:p olicy/AWSSupportAc cess, for incident management with AWS Support.
1.18	Ensure IAM instance roles are used for AWS resource access from instances	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
1.19	Ensure that all the expired SSL/TLS certificates stored in AWS IAM are removed	iam-expired-certificates (Process Check)	Ensure that all the expired SSL/TLS certificates stored in IAM are removed. From the command line with the installed AWS CLI run the 'AWS iam list-server-certificates' command and determine if there are any expired server certificates. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.20	Ensure that AWS IAM Access Analyzer is enabled	iam-access-analyzer-enabled (Process Check)	Ensure that IAM Access Analyzer is enabled. Within the IAM section of the console, select Access Analyzer and ensure that the STATUS is set to Active. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
1.21	Ensure users are managed centrally from the identity federation or AWS Organizations for multi-account environments	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
2.1.1	Ensure all S3 buckets employ encryption-at-rest	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.2	Ensure S3 Bucket Policy is set to deny HTTP requests	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.3	Ensure MFA Delete is enable on S3 buckets	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Adding multi factor authentication (MFA) delete to an S3 bucket requires an additional factor of authentication in order to change the version state of your bucket or to delete and object version. MFA delete can add an additional layer of security in the event security credentials are compromised or unauthorized access is granted.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.5	Ensure that S3 Buckets are configure d with 'Block public access (bucket settings)'	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.1.5	Ensure that S3 Buckets are configured with 'Block public access (bucket settings)'	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
2.2.1	Ensure EBS volume encryption is enabled	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.1	Ensure EBS volume encryption is enabled	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2.3.1	Ensure that encryption is enabled for RDS Instances	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.3.1	Ensure that encryption is enabled for RDS Instances	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Ensure CloudTrail is enabled in all regions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.2	Ensure CloudTrail log file validation is enabled	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Ensure the S3 bucket used to store CloudTrail logs is not publicly accessible	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.4	Ensure CloudTrail trails are integrated with CloudWatch Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Ensure AWS Config is enabled in all regions	config-enabled-all-regions (Process Check)	Ensure AWS Config is enabled in all AWS Regions. Within the AWS Config section of the console, for each Region enabled ensure the AWS Config recorder is configured correctly. Ensure recording of global AWS resources is enabled at least in one Region. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
3.6	Ensure S3 bucket access logging is enabled on the CloudTrail S3 bucket	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
3.7	Ensure CloudTrail logs are encrypted at rest using KMS CMKs	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
3.8	Ensure rotation for customer created CMKs is enabled	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.
3.9	Ensure VPC flow logging is enabled in all VPCs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Ensure that Object-level logging for write events is enabled for S3 bucket	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
3.11	Ensure that Object-level logging for read events is enabled for S3 bucket	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Ensure a log metric filter and alarm exist for unauthorized API calls	alarm-unauthorized-api-calls (Process Check)	Ensure a log metric filter and an alarm exists for unauthorized API calls. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.2	Ensure a log metric filter and alarm exist for Managemen t Console sign-in without MFA	alarm-sign-in-with out-mfa (Process Check)	Ensure a log metric filter and an alarm exists for AWS Management Console sign-in without Multi-Factor Authentic ation (MFA). For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_servic es/

Control ID	Control Description	AWS Config Rule	Guidance
4.3	Ensure a log metric filter and alarm exist for usage of 'root' account	alarm-root-account-use (Process Check)	Ensure a log metric filter and an alarm exists for usage of the root account. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.4	Ensure a log metric filter and alarm exist for IAM policy changes	alarm-iam-policy-change (Process Check)	Ensure a log metric filter and an alarm exists for IAM policy changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.5	Ensure a log metric filter and alarm exist for CloudTrail configuration changes	alarm-cloudtrail-config-change (Process Check)	Ensure a log metric filter and an alarm exists for AWS CloudTrail configuration changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Ensure a log metric filter and alarm exist for AWS Management Console authentication failures	alarm-console-auth-failures (Process Check)	Ensure a log metric filter and an alarm exists for AWS Management Console authentication failures. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.7	Ensure a log metric filter and alarm exist for disabling or scheduled deletion of customer created CMKs	alarm-kms-disable-or-delete-cmk (Process Check)	Ensure a log metric filter and an alarm exists for disabling or scheduled deletion of customer created CMKs. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.8	Ensure a log metric filter and alarm exist for S3 bucket policy changes	alarm-s3-bucket-policy-change (Process Check)	Ensure a log metric filter and an alarm exists for Amazon S3 bucket policy changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.9	Ensure a log metric filter and alarm exist for AWS Config configuration changes	alarm-aws-config-change (Process Check)	Ensure a log metric filter and an alarm exists for AWS Config configura tion changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.10	Ensure a log metric filter and alarm exist for security group changes	alarm-vpc-secrity-group-change (Process Check)	Ensure a log metric filter and an alarm exists for security group changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.11	Ensure a log metric filter and alarm exist for changes to Network Access Control Lists (NACL)	alarm-vpc-nacl-change (Process Check)	Ensure a log metric filter and an alarm exists for changes to Network Access Control Lists (NACL). For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.12	Ensure a log metric filter and alarm exist for changes to network gateways	alarm-vpc-network-gateway-change (Process Check)	Ensure a log metric filter and an alarm exists for changes to network gateways. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.13	Ensure a log metric filter and alarm exist for route table changes	alarm-vpc-route-table-change (Process Check)	Ensure a log metric filter and an alarm exists for route table changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.14	Ensure a log metric filter and alarm exist for VPC changes	alarm-vpc-change (Process Check)	Ensure a log metric filter and an alarm exists for Amazon Virtual Private Cloud (VPC) changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
4.15	Ensure a log metric filter and alarm exists for AWS Organizat ions changes	alarm-organization s-change (Process Check)	Ensure a log metric filter and an alarm exists for AWS Organizat ions changes. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
5.1	Ensure no Network ACLs allow ingress from 0.0.0.0/0 to remote server administration ports	nacl-no-unrestricted-ssh-rdp	Ensure no network ACLs allow public ingress to the remote server administr ation ports. Within the VPC section of the console, ensure there are network ACLs with a source of '0.0.0.0/0' with allowing ports or port ranges including remote server admin ports. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Ensure no security groups allow ingress from 0.0.0.0/0 to remote server administration ports	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Ensure no security groups allow ingress from 0.0.0.0/0 to remote server administration ports	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (CIS Standard value: 3389). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.3	Ensure the default security group of every VPC restricts all traffic	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Ensure routing tables for VPC peering are "least access"	vpc-peering-least-access (Process Check)	Ensure the routing tables for Amazon VPC peering are "least access". Within the VPC section of the console, examine the route table entries to ensure that the least number of subnets or hosts are required to accomplish the purpose for peering are routable. For further details on the auditing of this control please refer to the CIS Amazon Web Services Foundations Benchmark version 1.4.0 document available at https://www.cisecurity.org/benchmark/amazon_web_services/

Template

The template is available on GitHub: Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2.

Operational Best Practices for CIS Critical Security Controls v8 IG1

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Critical Security Controls v8 IG1 and AWS managed Config rules. Each AWS Config applies to a specific AWS resource, and relates to one or more CIS Critical Security Controls v8 IG1 controls. A CIS Critical Security Controls v8 IG1 control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2)

Control ID	Control Description	AWS Config Rule	Guidance
			instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-security-group-attached-to-eni	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
2.2	Ensure Authorized Software is Currently Supported	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
3.3	Configure Data Access Control Lists	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.3	Configure Data Access Control Lists	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.3	Configure Data Access Control Lists	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
3.3	Configure Data Access Control Lists	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
3.3	Configure Data Access Control Lists	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
3.3	Configure Data Access Control Lists	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.3	Configure Data Access Control Lists	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
3.3	Configure Data Access Control Lists	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3	Configure Data Access Control Lists	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.3	Configure Data Access Control Lists	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
3.3	Configure Data Access Control Lists	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
3.3	Configure Data Access Control Lists	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
3.3	Configure Data Access Control Lists	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Enforce Data Retention	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
3.4	Enforce Data Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
4.1	Establish and Maintain a Secure Configuration Process	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
4.1	Establish and Maintain a Secure Configuration Process	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
4.7	Manage Default Accounts on Enterprise Assets and Software	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
5.1	Establish and Maintain an Inventory of Accounts	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
5.2	Use Unique Passwords	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.3	Disable Dormant Accounts	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
6.5	Require MFA for Administrative Access	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
7.1	Establish and Maintain a Vulnerability Management Process	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.3	Perform Automated Operating System Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.4	Perform Automated Application Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	Establish and Maintain an Audit Log Management Process	audit-log-policy-exists (Process check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.
8.2	Collect Audit Logs	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
8.2	Collect Audit Logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.2	Collect Audit Logs	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
8.3	Ensure Adequate Audit Log Storage	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Deploy and Maintain Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.2	Configure Automatic Anti-Malware Signature Updates	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.2	Perform Automated Backups	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.2	Perform Automated Backups	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
11.3	Protect Recovery Data	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
11.3	Protect Recovery Data	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Template

The template is available on GitHub: Operational Best Practices for CIS Critical Security Controls v8 IG1.

Operational Best Practices for CIS Critical Security Controls v8 IG2

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Critical Security Controls v8 IG2 and AWS managed Config rules. Each AWS Config applies to a specific AWS resource, and relates to one or more CIS Critical Security Controls v8 IG2 controls. A CIS Critical Security Controls v8 IG2 control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	eip-attached	This rule ensures Elastic IPs allocated to an Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2)

Control ID	Control Description	AWS Config Rule	Guidance
			instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-security-group-attached-to-eni	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
2.2	Ensure Authorized Software is Currently Supported	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Utilize Automated Software Inventory Tools	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Utilize Automated Software Inventory Tools	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
3.3	Configure Data Access Control Lists	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.3	Configure Data Access Control Lists	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.3	Configure Data Access Control Lists	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
3.3	Configure Data Access Control Lists	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
3.3	Configure Data Access Control Lists	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
3.3	Configure Data Access Control Lists	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.3	Configure Data Access Control Lists	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
3.3	Configure Data Access Control Lists	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3	Configure Data Access Control Lists	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.3	Configure Data Access Control Lists	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
3.3	Configure Data Access Control Lists	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
3.3	Configure Data Access Control Lists	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
3.3	Configure Data Access Control Lists	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Enforce Data Retention	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
3.4	Enforce Data Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
3.10	Encrypt Sensitive Data in Transit	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.10	Encrypt Sensitive Data in Transit	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.10	Encrypt Sensitive Data in Transit	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.10	Encrypt Sensitive Data in Transit	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.11	Encrypt Sensitive Data at Rest	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
3.11	Encrypt Sensitive Data at Rest	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
3.11	Encrypt Sensitive Data at Rest	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
3.11	Encrypt Sensitive Data at Rest	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
4.1	Establish and Maintain a Secure Configuration Process	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
4.1	Establish and Maintain a Secure Configuration Process	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
4.1	Establish and Maintain a Secure Configuration Process	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
4.7	Manage Default Accounts on Enterprise Assets and Software	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
5.1	Establish and Maintain an Inventory of Accounts	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
5.2	Use Unique Passwords	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.3	Disable Dormant Accounts	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
5.6	Centralize Account Management	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
6.4	Require MFA for Remote Network Access	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
6.5	Require MFA for Administrative Access	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
6.7	Centralize Access Control	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.3	Perform Automated Operating System Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.4	Perform Automated Application Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.5	Perform Automated Vulnerability Scans of Internal Enterprise Assets	ecr-private-image-scanning-enabled	Amazon Elastic Container Repositor y (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.
8.1	Establish and Maintain an Audit Log Management Process	audit-log-policy-e xists (Process check)	Establish and maintain an audit log management policy that defines your organization's logging requireme nts. This includes, but is not limited to, review and retention of audit logs.
8.2	Collect Audit Logs	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
8.2	Collect Audit Logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.2	Collect Audit Logs	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
8.3	Ensure Adequate Audit Log Storage	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
8.5	Collect Detailed Audit Logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.5	Collect Detailed Audit Logs	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
8.5	Collect Detailed Audit Logs	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
8.7	Collect URL Request Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
8.9	Centralize Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
8.10	Retain Audit Logs	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
8.10	Retain Audit Logs	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Deploy and Maintain Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.2	Configure Automatic Anti-Malware Signature Updates	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.4	Configure Automatic Anti-Malware Scanning of Removable Media	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.6	Centrally Manage Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.7	Use Behavior-Based Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
11.2	Perform Automated Backups	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.2	Perform Automated Backups	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.2	Perform Automated Backups	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
11.3	Protect Recovery Data	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
11.3	Protect Recovery Data	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
12.2	Establish and Maintain a Secure Network Architecture	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.
12.2	Establish and Maintain a Secure Network Architecture	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
12.2	Establish and Maintain a Secure Network Architecture	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
12.2	Establish and Maintain a Secure Network Architecture	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
12.2	Establish and Maintain a Secure Network Architecture	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
12.2	Establish and Maintain a Secure Network Architecture	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
12.2	Establish and Maintain a Secure Network Architecture	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
12.3	Securely Manage Network Infrastructure	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.3	Securely Manage Network Infrastructure	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
12.6	Use of Secure Network Management and Communication Protocols	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.6	Use of Secure Network Management and Communication Protocols	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
12.6	Use of Secure Network Management and Communication Protocols	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.6	Use of Secure Network Management and Communication Protocols	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
13.1	Centralize Security Event Alerting	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
13.1	Centralize Security Event Alerting	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
13.3	Deploy a Network Intrusion Detection Solution	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
13.6	Collect Network Traffic Flow Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
13.6	Collect Network Traffic Flow Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Template

The template is available on GitHub: Operational Best Practices for CIS Critical Security Controls v8 IG2.

Operational Best Practices for CIS Critical Security Controls v8 IG3

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Critical Security Controls v8 IG3 and AWS managed Config rules. Each AWS Config applies to a specific AWS resource, and relates to one or more CIS Critical Security Controls v8 IG3 controls. A CIS Critical Security Controls v8 IG3 control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	vpc-network-acl-un used-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access

Control ID	Control Description	AWS Config Rule	Guidance
			control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
1.1	Establish and Maintain Detailed Enterprise Asset Inventory	ec2-security-group-attached-to-eni	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
2.2	Ensure Authorized Software is Currently Supported	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Ensure Authorized Software is Currently Supported	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Utilize Automated Software Inventory Tools	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Utilize Automated Software Inventory Tools	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
3.3	Configure Data Access Control Lists	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.3	Configure Data Access Control Lists	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.3	Configure Data Access Control Lists	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
3.3	Configure Data Access Control Lists	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
3.3	Configure Data Access Control Lists	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
3.3	Configure Data Access Control Lists	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.3	Configure Data Access Control Lists	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3	Configure Data Access Control Lists	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.3	Configure Data Access Control Lists	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
3.3	Configure Data Access Control Lists	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
3.3	Configure Data Access Control Lists	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Configure Data Access Control Lists	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
3.3	Configure Data Access Control Lists	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Enforce Data Retention	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
3.4	Enforce Data Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
3.10	Encrypt Sensitive Data in Transit	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.10	Encrypt Sensitive Data in Transit	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.10	Encrypt Sensitive Data in Transit	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.10	Encrypt Sensitive Data in Transit	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.10	Encrypt Sensitive Data in Transit	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.11	Encrypt Sensitive Data at Rest	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
3.11	Encrypt Sensitive Data at Rest	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
3.11	Encrypt Sensitive Data at Rest	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
3.11	Encrypt Sensitive Data at Rest	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
3.11	Encrypt Sensitive Data at Rest	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
3.11	Encrypt Sensitive Data at Rest	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
3.14	Log Sensitive Data Access	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
3.14	Log Sensitive Data Access	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
3.14	Log Sensitive Data Access	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.14	Log Sensitive Data Access	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.14	Log Sensitive Data Access	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
4.1	Establish and Maintain a Secure Configuration Process	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
4.1	Establish and Maintain a Secure Configuration Process	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Establish and Maintain a Secure Configuration Process	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
4.6	Securely Manage Enterprise Assets and Software	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
4.6	Securely Manage Enterprise Assets and Software	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
4.7	Manage Default Accounts on Enterprise Assets and Software	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
5.1	Establish and Maintain an Inventory of Accounts	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
5.2	Use Unique Passwords	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Use Unique Passwords	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.3	Disable Dormant Accounts	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
5.4	Restrict Administrator Privileges to Dedicated Administrator Accounts	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
5.6	Centralize Account Management	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
6.4	Require MFA for Remote Network Access	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
6.4	Require MFA for Remote Network Access	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
6.5	Require MFA for Administrative Access	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
6.7	Centralize Access Control	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
7.1	Establish and Maintain a Vulnerability Management Process	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.3	Perform Automated Operating System Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.3	Perform Automated Operating System Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.4	Perform Automated Application Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
7.4	Perform Automated Application Patch Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.5	Perform Automated Vulnerability Scans of Internal Enterprise Assets	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.
8.1	Establish and Maintain an Audit Log Management Process	audit-log-policy-exists (Process check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.
8.2	Collect Audit Logs	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
8.2	Collect Audit Logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.2	Collect Audit Logs	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
8.2	Collect Audit Logs	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
8.3	Ensure Adequate Audit Log Storage	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
8.5	Collect Detailed Audit Logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.5	Collect Detailed Audit Logs	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
8.5	Collect Detailed Audit Logs	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
8.5	Collect Detailed Audit Logs	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
8.7	Collect URL Request Audit Logs	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
8.9	Centralize Audit Logs	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
8.10	Retain Audit Logs	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
8.10	Retain Audit Logs	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Deploy and Maintain Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.2	Configure Automatic Anti-Malware Signature Updates	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.4	Configure Automatic Anti-Malware Scanning of Removable Media	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
10.6	Centrally Manage Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
10.7	Use Behavior-Based Anti-Malware Software	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
11.2	Perform Automated Backups	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.2	Perform Automated Backups	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	Perform Automated Backups	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.2	Perform Automated Backups	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
11.3	Protect Recovery Data	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
11.3	Protect Recovery Data	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Protect Recovery Data	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
11.4	Establish and Maintain an Isolated Instance of Recovery Data	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
12.2	Establish and Maintain a Secure Network Architecture	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.
12.2	Establish and Maintain a Secure Network Architecture	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
12.2	Establish and Maintain a Secure Network Architecture	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
12.2	Establish and Maintain a Secure Network Architecture	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
12.2	Establish and Maintain a Secure Network Architecture	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
12.2	Establish and Maintain a Secure Network Architecture	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
12.2	Establish and Maintain a Secure Network Architecture	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
12.2	Establish and Maintain a Secure Network Architecture	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
12.2	Establish and Maintain a Secure Network Architecture	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
12.3	Securely Manage Network Infrastructure	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.3	Securely Manage Network Infrastructure	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
12.3	Securely Manage Network Infrastructure	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.3	Securely Manage Network Infrastructure	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
12.6	Use of Secure Network Management and Communication Protocols	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.6	Use of Secure Network Management and Communication Protocols	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
12.6	Use of Secure Network Management and Communication Protocols	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
12.6	Use of Secure Network Management and Communication Protocols	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
12.6	Use of Secure Network Management and Communication Protocols	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
13.1	Centralize Security Event Alerting	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
13.1	Centralize Security Event Alerting	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
13.3	Deploy a Network Intrusion Detection Solution	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
13.6	Collect Network Traffic Flow Logs	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
13.6	Collect Network Traffic Flow Logs	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
13.10	Perform Application Layer Filtering	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-environment-privil eged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environme nt does not have privileged mode enabled. This setting should be disabled to prevent unintende d access to Docker APIs as well as the container's underlyin g hardware.

Control ID	Control Description	AWS Config Rule	Guidance
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
16.1	Establish and Maintain a Secure Application Development Process	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
16.12	Implement Code-Level Security Checks	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
16.12	Implement Code-Level Security Checks	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
16.12	Implement Code-Level Security Checks	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
16.12	Implement Code-Level Security Checks	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
16.12	Implement Code-Level Security Checks	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Template

The template is available on GitHub: Operational Best Practices for CIS Critical Security Controls v8 IG3.

Operational Best Practices for CIS Top 20

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Center for Internet Security (CIS) Top 20 Critical Security Controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more CIS Top 20 controls. A CIS Top 20 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This Conformance Pack was validated by AWS Security Assurance Services LLC (AWS SAS), which is a team of Payment Card Industry Qualified Security Assessors (QSAs), HITRUST Certified Common Security Framework Practitioners (CCSFPs), and compliance professionals certified to provide guidance and assessments for various industry frameworks. AWS SAS professionals designed this Conformance Pack to enable a customer to align to a subset of the CIS Top 20.

Control ID	AWS Config Rule	Guidance
CIS.2	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
CIS.2	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CIS.2	ec2-security-group-attached-to-eni	This rule ensures the security groups are attached to an Amazon Elastic Compute

Control ID	AWS Config Rule	Guidance
		Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.
CIS.2	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organizat ion's standards.
CIS.2	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.

Control ID	AWS Config Rule	Guidance
CIS.2	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
CIS.3	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
CIS.3	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
CIS.3	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
CIS.4	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CIS.4	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
CIS.4	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
CIS.4	root-account-hardware-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
CIS.4	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CIS.4	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
CIS.5	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
CIS.5	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
CIS.5	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CIS.5	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.5	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
CIS.6	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CIS.6	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
CIS.6	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CIS.6	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
CIS.6	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CIS.6	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
CIS.6	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CIS.6	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
CIS.6	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.6	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
CIS.6	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.6	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
CIS.6	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
CIS.6	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
CIS.8	guardduty-enabled-centraliz ed	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CIS.9	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.9	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CIS.9	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
CIS.9	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
CIS.9	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CIS.9	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
CIS.9	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
CIS.9	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
CIS.9	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
CIS.9	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
CIS.9	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.9	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CIS.9	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.9	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.9	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
CIS.9	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
CIS.9	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CIS.9	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CIS.9	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
CIS.9	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
CIS.10	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
CIS.10	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
CIS.10	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
CIS.10	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CIS.10	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
CIS.11	ec2-security-group-attached-to-eni	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
CIS.11	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
CIS.11	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.11	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
CIS.11	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
CIS.12	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CIS.12	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CIS.12	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.12	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
CIS.12	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.12	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CIS.12	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
CIS.12	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
CIS.12	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
CIS.12	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
CIS.12	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
CIS.12	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.12	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CIS.12	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.12	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.12	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
CIS.12	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
CIS.12	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CIS.12	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
CIS.12	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
CIS.12	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
CIS.12	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
CIS.13	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.13	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CIS.13	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
CIS.13	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CIS.13	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
CIS.13	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
CIS.13	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CIS.13	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CIS.13	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
CIS.13	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CIS.13	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CIS.13	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	AWS Config Rule	Guidance
CIS.13	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
CIS.13	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.13	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
CIS.13	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CIS.13	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.13	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CIS.13	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CIS.13	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.13	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
CIS.13	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
CIS.14	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.14	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CIS.14	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
CIS.14	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CIS.14	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
CIS.14	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
CIS.14	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CIS.14	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.14	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
CIS.14	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CIS.14	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CIS.14	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
CIS.14	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.
CIS.14	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
CIS.14	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
CIS.14	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CIS.14	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.14	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CIS.14	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
CIS.14	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
CIS.14	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CIS.14	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.14	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
CIS.14	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
CIS.14	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
CIS.14	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CIS.14	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CIS.14	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.14	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CIS.14	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
CIS.14	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CIS.16	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.
CIS.16	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
CIS.16	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
CIS.16	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
CIS.16	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
CIS.16	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
CIS.16	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundations Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
CIS.16	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CIS.16	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
CIS.16	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
CIS.16	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
CIS.16	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
CIS.16	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
CIS.16	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
CIS.16	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CIS.16	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
CIS.16	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
CIS.16	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
CIS.16	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
CIS.18	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
CIS.18	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.
CIS.19	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
CIS.19	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
CIS.19	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
CIS.2	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Template

The template is available on GitHub: Operational Best Practices for CIS Top 20.

Operational Best Practices for CISA Cyber Essentials

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Cybersecurity & Infrastructure Security Agency (CISA) Cyber Essentials (CE) and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more CISA CE controls. A CISA CE control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
Your Staff-1	Develop a culture of awareness to encourage employees to make good choices online.	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
Your Staff-2	Learn about risks like phishing and business email compromise.XXXXX.	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
Your Staff-3	Maintain awareness of current events related to cybersecurity, using lessons-learned and reported events to remain vigilant against the current threat environment and	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from

Control ID	Control Description	AWS Config Rule	Guidance
	agile to cybersecurity trends.		various security breaches or incidents.
Your Staff-4	Leverage basic cybersecurity training to improve exposure to cybersecurity concepts, terminolo gy and activitie s associated with implementing cybersecurity best practices.	security-awareness -program-exists(Pr ocess Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
Your Staff-5	Identify available training resources through professio nal associations, academic institutions, private sector and government sources.	security-awareness -program-exists(Pr ocess Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-1	Learn what is on your network. Maintain inventories of hardware and software assets to know what is in play and at-risk from attack.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.
Your Systems-2	Leverage automatic updates for all operating systems and third-party software.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-2	Leverage automatic updates for all operating systems and third-party software.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-2	Leverage automatic updates for all operating systems and third-party software.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-2	Leverage automatic updates for all operating systems and third-party software.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
Your Systems-3	Implement security configurations for all hardware and software assets.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
Your Systems-3	Implement security configurations for all hardware and software assets.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Your Systems-3	Implement security configurations for all hardware and software assets.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
Your Systems-3	Implement security configurations for all hardware and software assets.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
Your Systems-3	Implement security configurations for all hardware and software assets.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Your Systems-3	Implement security configurations for all hardware and software assets.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
Your Systems-3	Implement security configurations for all hardware and software assets.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Your Systems-3	Implement security configurations for all hardware and software assets.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
Your Systems-3	Implement security configurations for all hardware and software assets.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
Your Systems-3	Implement security configurations for all hardware and software assets.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Your Systems-3	Implement security configurations for all hardware and software assets.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	opensearch-data-node-fault-tolerance	Amazon OpenSearch Service (OpenSearch Service) requires at least three data nodes for high availability and fault-tolerance. Deploying an OpenSearch Service domain with at least three data nodes ensures cluster operations if a node fails.
Your Systems-3	Implement security configurations for all hardware and software assets.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Your Systems-3	Implement security configurations for all hardware and software assets.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
Your Systems-3	Implement security configurations for all hardware and software assets.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Your Systems-3	Implement security configurations for all hardware and software assets.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
Your Systems-3	Implement security configurations for all hardware and software assets.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Your Systems-3	Implement security configurations for all hardware and software assets.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.
Your Systems-3	Implement security configurations for all hardware and software assets.	secretsmanager-secret-periodic-rotation	This rule ensures AWS Secrets Manager secrets have periodic rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
Your Systems-3	Implement security configurations for all hardware and software assets.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Your Systems-3	Implement security configurations for all hardware and software assets.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Your Systems-3	Implement security configurations for all hardware and software assets.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.
Your Systems-3	Implement security configurations for all hardware and software assets.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-3	Implement security configurations for all hardware and software assets.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Systems-4	Remove unsupported or unauthorized hardware and software from systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-1	Learn who is on your network. Maintain inventories of network connections (users, vendors, business partners, etc.).	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Your Surroundings-1	Learn who is on your network. Maintain inventories of network connections (users, vendors, business partners, etc.).	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-1	Learn who is on your network. Maintain inventories of network connections (users, vendors, business partners, etc.).	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.
Your Surroundings-2	Leverage multi-factor authentication for all users, starting with privileged, administrative and remote access users.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-2	Leverage multi-factor authentication for all users, starting with privileged, administrative and remote access users.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-2	Leverage multi-factor authentication for all users, starting with privileged, administrative and remote access users.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-2	Leverage multi-factor authentication for all users, starting with privileged, administrative and remote access users.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	s3-bucket-policy-g rantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_gran tee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principal s, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	secretsmanager-sec ret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-3	Grant access and admin permissio ns based on need-to-know and least privilege.	opensearch-access-control-enabled	Ensure fine-grai ned access control is enabled on your Amazon OpenSearc h Service domains. Fine-grained access control provides enhanced authoriza tion mechanisms to achieve least-pri vileged access to Amazon OpenSearc h Service domains. It allows for role-base d access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-ten ancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
Your Surroundings-4	Leverage unique passwords for all users.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
Your Data-1	Learn how your data is protected.	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Your Data-1	Learn how your data is protected.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
Your Data-1	Learn how your data is protected.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Your Data-1	Learn how your data is protected.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
Your Data-1	Learn how your data is protected.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Your Data-1	Learn how your data is protected.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Your Data-1	Learn how your data is protected.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-1	Learn how your data is protected.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
Your Data-1	Learn how your data is protected.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
Your Data-2	Learn what is happening on your network. manage network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-2	Learn what is happening on your network. manage network and perimeter component s, host and device components, data-at-rest and in-transi t, and user behavior activities.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
Your Data-3	Domain name system protection.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
Your Data-4	Establish regular automated backups and redundancies of key systems.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Your Data-4	Establish regular automated backups and redundancies of key systems.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
Your Data-4	Establish regular automated backups and redundancies of key systems.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
Your Data-4	Establish regular automated backups and redundancies of key systems.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-4	Establish regular automated backups and redundancies of key systems.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Your Data-5	Leverage protections for backups, including physical security, encryption and offline copies.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
Your Data-5	Leverage protectio ns for backups, including physical security, encryption and offline copies.	backup-recovery-po int-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.
Your Crisis Response-2	Lead development of an internal reporting structure to detect, communicate and contain attacks.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
Your Crisis Response-2	Lead development of an internal reporting structure to detect, communicate and contain attacks.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	backup-recovery-po int-minimum-retent ion-check	To help with data back-up processes , ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. This rule allows you to set the requiredRetentionD ays (config default: 35) parameter. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-1	Employ a backup solution that automatically and continuously backs up critical data and system configura tions.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-2	Require multi-factor authentication (MFA) for accessing your systems whenever possible.MFA should be required of all users, but start with privileged, administrative, and remote access users.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-2	Require multi-factor authentication (MFA) for accessing your systems whenever possible.MFA should be required of all users, but start with privileged, administrative, and remote access users.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-2	Require multi-factor authentication (MFA) for accessing your systems whenever possible.MFA should be required of all users, but start with privileged, administrative, and remote access users.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-2	Require multi-factor authentication (MFA) for accessing your systems whenever possible.MFA should be required of all users, but start with privileged, administrative, and remote access users.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Booting Up: Things to Do First-3	Enable automatic updates whenever possible. Replace unsupported operating systems, applications and hardware. Test and deploy patches quickly.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-3	Enable automatic updates whenever possible. Replace unsupported operating systems, applications and hardware. Test and deploy patches quickly.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
Booting Up: Things to Do First-3	Enable automatic updates whenever possible. Replace unsupported operating systems, applications and hardware. Test and deploy patches quickly.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
Booting Up: Things to Do First-3	Enable automatic updates whenever possible. Replace unsupported operating systems, applications and hardware. Test and deploy patches quickly.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for CISA Cyber Essentials.

Operational Best Practices for Criminal Justice Information Services (CJIS)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Criminal Justice Information Services (CJIS) Compliance Requirements and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more CJIS controls. A CJIS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
5.2	Security Awareness Training	security-awareness -program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
5.3	Incident Response	response-plan-exists-maintained (Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel . Having updated and formally documente

Control ID	Control Description	AWS Config Rule	Guidance
			d response plans can assist in making sure response personnel understand roles, responsibilities and processes to be followed during an incident.
5.3	Incident Response	response-plan-tested (Process Check)	Ensure Incident response and recovery plans are tested. This can assist in understanding if your plan will be effective during an incident and if any gaps or updates need to be addressed.
5.4	Auditing and Accountability	audit-log-policy-exists (Process check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
5.4.1	Auditable Events and Content (Information Systems)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
5.4.1	Auditable Events and Content (Information Systems)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
5.4.1	Auditable Events and Content (Information Systems)	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.
5.4.1	Auditable Events and Content (Information Systems)	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
5.4.1	Auditable Events and Content (Information Systems)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
5.4.1	Auditable Events and Content (Information Systems)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.1	Auditable Events and Content (Information Systems)	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
5.4.5	Protection of Audit Information	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.5	Protection of Audit Information	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
5.4.5	Protection of Audit Information	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

Control ID	Control Description	AWS Config Rule	Guidance
5.4.6	Audit Record Retention	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
5.4.6	Audit Record Retention	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionall y set RequireUp percaseCharacters (CJIS value: false), RequireLowercaseCh aracters (CJIS value: false), RequireSy mbols (CJIS value: false), RequireNu mbers (CJIS value: false), MinimumPa sswordLength (CJIS value: 8), PasswordR eusePrevention (CJIS value: 10), and MaxPasswordAge (CJIS value: 90) for your IAM Password Policy. The actual

Control ID	Control Description	AWS Config Rule	Guidance
			values should reflect your organization's policies.
5.5.2	Access Enforcement	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
5.5.2	Access Enforcement	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
5.5.2	Access Enforcement	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2	Access Enforcement	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the containerâ€™s underlying hardware.
5.5.2.1	Least Privilege	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
5.5.2.1	Least Privilege	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	ecs-containers-non privileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitio ns should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
5.5.2.1	Least Privilege	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instanceâ €™s filesystem cannot be modified unless it has explicit read-write permissio ns.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
5.5.2.1	Least Privilege	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.2.1	Least Privilege	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.6	Remote Access	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
5.5.6	Remote Access	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.2.1.1	Password	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionall y set RequireUp percaseCharacters (CJIS value: false), RequireLowercaseCh aracters (CJIS value: false), RequireSy mbols (CJIS value: false), RequireNu mbers (CJIS value: false), MinimumPa sswordLength (CJIS value: 8), PasswordR eusePrevention (CJIS value: 10), and MaxPasswordAge (CJIS value: 90) for your IAM Password Policy. The actual

Control ID	Control Description	AWS Config Rule	Guidance
			values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.2.2	Advanced Authentication	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
5.6.2.2	Advanced Authentication	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.2.2	Advanced Authentication	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.2.2	Advanced Authentication	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.2.2	Advanced Authentication	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.6.3.1	Identifier Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
5.7.1.1	Least Functionality	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
5.7.1.1	Least Functionality	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
5.7.1.1	Least Functionality	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
5.7.1.1	Least Functionality	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
5.7.1.1	Least Functionality	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
5.7.1.1	Least Functionality	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
5.7.1.1	Least Functionality	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.7.1.1	Least Functionality	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
5.7.1.1	Least Functionality	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10	System and Communications Protection and Information Integrity	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
5.10	System and Communications Protection and Information Integrity	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10	System and Communications Protection and Information Integrity	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.
5.10	System and Communications Protection and Information Integrity	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10	System and Communications Protection and Information Integrity	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
5.10.1	Information Flow Enforcement	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1	Information Flow Enforcement	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1	Information Flow Enforcement	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
5.10.1	Information Flow Enforcement	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
5.10.1	Information Flow Enforcement	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1	Information Flow Enforcement	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
5.10.1	Information Flow Enforcement	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
5.10.1	Information Flow Enforcement	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
5.10.1	Information Flow Enforcement	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1	Information Flow Enforcement	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.1	Boundary Protection	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
5.10.1.1	Boundary Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
5.10.1.1	Boundary Protection	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.1	Boundary Protection	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no condition s could result in unintended behavior.
5.10.1.1	Boundary Protection	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
5.10.1.1	Boundary Protection	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
5.10.1.2	Encryption	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
5.10.1.2	Encryption	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
5.10.1.2	Encryption	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.
5.10.1.2	Encryption	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
5.10.1.2	Encryption	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
5.10.1.2	Encryption	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
5.10.1.2	Encryption	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
5.10.1.2	Encryption	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
5.10.1.2	Encryption	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.2	Encryption	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
5.10.1.3	Intrusion Detection Tools and Techniques	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.3	Intrusion Detection Tools and Techniques	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.1.3	Intrusion Detection Tools and Techniques	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.1	Patch Management	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.1	Patch Management	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.1	Patch Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.1	Patch Management	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.1	Patch Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
5.10.4.4	Security Alerts and Advisories	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.4	Security Alerts and Advisories	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5.10.4.4	Security Alerts and Advisories	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Template

The template is available on GitHub: Operational Best Practices for CJIS.

Operational Best Practices for CMMC 2.0 Level 1

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Cybersecurity Maturity Model Certification (CMMC) 2.0 Level 1 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more CMMC 2.0 Level 1 controls. A CMMC 2.0 Level 1 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.
AC.L1-3.1.1	Limit information system access to	dms-replication-not-public	Manage access to the AWS Cloud

Control ID	Control Description	AWS Config Rule	Guidance
	authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).		by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L1-3.1.20	Verify and control/limit connections to and use of external information systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
IA.L1-3.5.1	Identify information system users, processes acting on behalf of users, or devices.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.2	Authenticate (or verify) the identitie s of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA.L1-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L1-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC.L1-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L1-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	opensearch-node-to -node-encryption-c heck	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L1-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L1-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L1-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L1-3.14.2	Provide protectio n from malicious code at appropria te locations within organizational information systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
SI.L1-3.14.5	Perform periodic scans of the informati on system and real-time scans of files from external sources as files are downloaded, opened, or executed.	ecr-private-image-scanning-enabled	Amazon Elastic Container Repositor y (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Template

The template is available on GitHub: Operational Best Practices for CMMC 2.0 Level 1.

Operational Best Practices for CMMC 2.0 Level 2

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Cybersecurity Maturity Model Certification (CMMC) 2.0 Level 2 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more CMMC 2.0 Level 2 controls. A CMMC 2.0 Level 2 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual

Control ID	Control Description	AWS Config Rule	Guidance
			value should reflect your organization's policies.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	secretsmanager-rot ation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	secretsmanager-sch eduled-rotation-su ccess-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.1	Limit information system access to authorized users, processes acting on behalf of authorize d users, or devices (including other information systems).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.2	Limit information system access to the types of transactions and functions that authorized users are permitted to execute.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.20	Verify and control/limit connections to and use of external information systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordance with approved authorizations.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC.L2-3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	s3-bucket-policy-g rantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_gran tee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principal s, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC.L2-3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC.L2-3.1.7	Prevent non-privi leged users from executing privileged functions and capture the execution of such functions in audit logs.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privi leged users from executing privileged functions and capture the execution of such functions in audit logs.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AC.L2-3.1.7	Prevent non-privi leged users from executing privileged functions and capture the execution of such functions in audit logs.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privi leged users from executing privileged functions and capture the execution of such functions in audit logs.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.7	Prevent non-privileged users from executing privileged functions and capture the execution of such functions in audit logs.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.12	Monitor and control remote access sessions.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.12	Monitor and control remote access sessions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AC.L2-3.1.12	Monitor and control remote access sessions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.12	Monitor and control remote access sessions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
AC.L2-3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitorin g, analysis, investiga tion, and reporting of unlawful or unauthori zed system activity.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful or unauthorized system activity.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.1	Create and retain system audit logs and records to the extent needed to enable the monitorin g, analysis, investiga tion, and reporting of unlawful or unauthori zed system activity.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.4	Alert in the event of an audit logging process failure.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.4	Alert in the event of an audit logging process failure.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU.L2-3.3.4	Alert in the event of an audit logging process failure.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.4	Alert in the event of an audit logging process failure.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.5	Correlate audit record review, analysis, and reporting processes for investigation and response to indicatio ns of unlawful, unauthorized, suspicious, or unusual activity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.5	Correlate audit record review, analysis, and reporting processes for investigation and response to indicatio ns of unlawful, unauthorized, suspicious, or unusual activity.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
AU.L2-3.3.8	Protect audit information and audit logging tools from unauthorized access, modification, and deletion.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA.L2-3.12.2	Develop and implement plans of action designed to correct deficiencies and reduce or eliminate vulnerabilities in organizational systems.	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsibilities.
CA.L2-3.12.3	Monitor security controls on an ongoing basis to ensure the continued effectiveness of the controls.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA.L2-3.12.3	Monitor security controls on an ongoing basis to ensure the continued effectiveness of the controls.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA.L2-3.12.3	Monitor security controls on an ongoing basis to ensure the continued effectiveness of the controls.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CM.L2-3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.
CM.L2-3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	account-part-of-or ganizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsist ent account configura tions, which may expose resources and sensitive data.
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	ec2-managedinstanc e-association-comp liance-status-check	Use AWS Systems Manager Associati ons to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configura tion state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	elastic-beanstalk-managed-updates-en abled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	rds-automatic-mino r-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.2	Establish and enforce security configuration settings for informati on technology products employed in organizational systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
CM.L2-3.4.3	Track, review, approve, or disapprov e, and log changes to organizational systems.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprov e, and log changes to organizational systems.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.3	Track, review, approve, or disapprove, and log changes to organizational systems.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-managedinstanc e-association-comp liance-status-check	Use AWS Systems Manager Associati ons to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configura tion state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	no-unrestricted-ro ute-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.7	Restrict, disable, or prevent the use of nonessential programs, functions, ports, protocols, and services.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.9	Control and monitor user-installed software.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.9	Control and monitor user-installed software.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM.L2-3.4.9	Control and monitor user-installed software.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
IA.L2-3.5.1	Identify information system users, processes acting on behalf of users, or devices.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.1	Identify informati on system users, processes acting on behalf of users, or devices.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.2	Authenticate (or verify) the identitie s of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.2	Authenticate (or verify) the identitie s of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA.L2-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.2	Authenticate (or verify) the identitie s of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentia ls. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA.L2-3.5.3	Use multifactor authentication for local and network access to privilege d accounts and for network access to non-privileged accounts.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.6	Disable identifiers after a defined period of inactivity.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.6	Disable identifiers after a defined period of inactivity.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.7	Enforce a minimum password complexit y and change of characters when new passwords are created.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.8	Prohibit password reuse for a specified number of generatio ns.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	alb-http-drop-inva lid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	sagemaker-endpoint -configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
IA.L2-3.5.10	Store and transmit only cryptogra phically-protected passwords.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
IA.L2-3.5.10	Store and transmit only cryptographically-protected passwords.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IR.L2-3.6.1	Establish an operational incident-handling capabilit y for organizat ional systems that includes preparati on, detection, analysis, containme nt, recovery, and user response activities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR.L2-3.6.1	Establish an operational incident-handling capability for organizational systems that includes preparation, detection, analysis, containment, recovery, and user response activities.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR.L2-3.6.1	Establish an operational incident-handling capabilit y for organizat ional systems that includes preparati on, detection, analysis, containme nt, recovery, and user response activities.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
IR.L2-3.6.1	Establish an operational incident-handling capability for organizational systems that includes preparation, detection, analysis, containment, recovery, and user response activities.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
IR.L2-3.6.3	Test the organizational incident response capability.	response-plan-tested (Process Check)	Ensure Incident response and recovery plans are tested. This can assist in understanding if your plan will be effective during an incident and if any gaps or updates need to be addressed.

Control ID	Control Description	AWS Config Rule	Guidance
MA.L2-3.7.5	Require multifact or authentication to establish nonlocal maintenance sessions from external network connections and terminate such connections when nonlocal maintenan ce is complete.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
MA.L2-3.7.5	Require multifact or authentication to establish nonlocal maintenance sessions from external network connections and terminate such connections when nonlocal maintenan ce is complete.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
RA.L2-3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting those systems and applications are identified.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
RA.L2-3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting those systems and applications are identified.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
RA.L2-3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting those systems and applications are identified.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RA.L2-3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting those systems and applications are identified.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizat ional communica tions (i.e., informati on transmitted or received by organizat ional information systems) at the external boundarie s and key internal boundaries of the information systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.1	Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dynamodb-autoscali ng-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/writ e capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
SC.L2-3.13.4	Prevent unauthori zed and unintended information transfer from shared system resources.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthori zed and unintended information transfer from shared system resources.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.4	Prevent unauthorized and unintended information transfer from shared system resources.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.10	Establish and manage cryptographic keys for cryptography employed in organizational systems.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.10	Establish and manage cryptographic keys for cryptography employed in organizational systems.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SC.L2-3.13.15	Protect the authenticity of communications sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.15	Protect the authenticity of communications sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
SC.L2-3.13.15	Protect the authenticity of communications sessions.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.15	Protect the authenticity of communications sessions.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC.L2-3.13.15	Protect the authenticity of communications sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.15	Protect the authenticity of communications sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC.L2-3.13.16	Protect the confidentiality of CUI at rest.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.1	Identify, report, and correct informati on and information system flaws in a timely manner.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.2	Provide protection from malicious code at appropriate locations within organizational information systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SI.L2-3.14.5	Perform periodic scans of the information system and real-time scans of files from external sources as files are downloaded, opened, or executed.	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.3	Monitor system security alerts and advisories and take action in response.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SI.L2-3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI.L2-3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI.L2-3.14.7	Identify unauthorized use of organizational systems.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Template

The template is available on GitHub: Operational Best Practices for CMMC 2.0 Level 2.

Operational Best Practices for Compute Services

This conformance pack contains AWS Config rules based on Compute Services. For more information, see Compute for any workload. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Compute Services.

Operational Best Practices for Data Resiliency

For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Data Resiliency.

Operational Best Practices for Databases Services

This conformance pack contains AWS Config rules based on Databases Services. For more information, see Databases on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Databases Services.

Operational Best Practices for Data Lakes and Analytics Services

This conformance pack contains AWS Config rules for Data Lakes and Analytics Services. For more information, see Data Lakes and Analytics on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Data Lakes and Analytics Services.

Operational Best Practices for DevOps

This conformance pack contains AWS Config rules based on DevOps within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for DevOps.

Operational Best Practices for EC2

This conformance pack contains AWS Config rules based on EC2. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for EC2.

Operational Best Practices for Encryption and Key Management

For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Encryption and Key Management.

Operational Best Practices for ENISA Cybersecurity guide for SMEs

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the European Union Agency for Cybersecurity (ENISA) Cybersecurity guide for SMEs and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more ENISA Cybersecurity guide for SMEs controls. An ENISA Cybersecurity guide for SMEs control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls adapted from the ENISA Cybersecurity guide for SMEs. The ENISA Cybersecurity guide for SMEs is available at Cybersecurity guide for SMEs - 12 steps to securing your business.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: PUBLISH CYBERSECURITY POLICIES	Clear and specific rules should be outlined in cybersecurity	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate security controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances

Control ID	Control Description	AWS Config Rule	Guidance
	or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.		cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-acl-proh ibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	alb-http-drop-inva lid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	api-gw-cache-enabl ed-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	backup-recovery-point-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	dynamodb-table-enc rypted-kms	Ensure that encryptio n is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

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1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elasticsearch Service (Amazon ES) domains.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	efs-access-point-e nforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirect ory.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	efs-access-point-e nforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configure d on the access point for all file system operations and only grants access to this enforced user identity.

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1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

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1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

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1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	secretsmanager-usi ng-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	elasticsearch-node-to-node-encryption-check	Ensure node-to-n ode encryption for Amazon Elasticse arch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	opensearch-node-to -node-encryption-c heck	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	kinesis-stream-enc rypted	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	no-unrestricted-ro ute-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	rds-storage-encryp ted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-server-s ide-encryption-ena bled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1_DEVELOP GOOD CYBERSECURITY CULTURE: REMEMBER DATA PROTECTION	Under the EU General Data Protection Regulation1 any SMEs that process or store personal data belonging to EU/EEA residents need to ensure that appropriate securi ty controls are in place to protect that data. This includes ensuring that any third parties working on behalf of the SME have appropriate security measures in place.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
2_PROVIDE APPROPRIATE TRAINING	Provide regular cybersecurity awareness trainings for all employees to ensure they can recognize and deal with the various cybersecurity threats. These trainings should be tailored for SME's and focus on real-life situations. Provide specialized cybersecurity training for those responsible for managing cybersecurity within the business to ensure they will have the skills and competencies required to do their job.	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
4_DEVELOP AN INCIDENT RESPONSE PLAN	Develop a formal incident response plan, which contains clear guidelines, roles and responsibiliti es documented to ensure that all security incidents are responded to in a timely, professio nal and appropria te manner. To respond quickly to security threats, investigate tools that could monitor and create alerts when suspicious activity or security breaches are occurring.	response-plan-exists-maintained(Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel .

Control ID	Control Description	AWS Config Rule	Guidance
5_SECURE ACCESS TO SYSTEMS	Encourage everyone to use a passphrase, a collection of at least three random common words combined into a phrase that provide a very good combination of memorability and security. If you opt for a typical password: - Make it long, with lower and upper case characters, possibly also numbers and special characters. - Avoid obvious, such as “password”, sequences of letters or numbers like “abc”, numbers like “123”. - Avoid using personal info that can be found online. And whether you use passphrases or passwords - Do not reuse them elsewhere. - Do not share them with colleagues. - Enable Multi-Factor Authentication. - Use	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
	a dedicated password manager.		sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5_SECURE ACCESS TO SYSTEMS	Encourage everyone to use a passphrase, a collection of at least three random common words combined into a phrase that provide a very good combination of memorability and security. If you opt for a typical password: - Make it long, with lower and upper case characters, possibly also numbers and special characters. - Avoid obvious, such as “password”, sequences of letters or numbers like “abc”, numbers like “123”. - Avoid using personal info that can be found online. And whether you use passphrases or passwords - Do not reuse them elsewhere. - Do not share them with colleagues. - Enable Multi-Factor Authentication. - Use	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
	a dedicated password manager.		

Control ID	Control Description	AWS Config Rule	Guidance
5_SECURE ACCESS TO SYSTEMS	Encourage everyone to use a passphrase, a collection of at least three random common words combined into a phrase that provide a very good combination of memorability and security. If you opt for a typical password: - Make it long, with lower and upper case characters, possibly also numbers and special characters. - Avoid obvious, such as “password”, sequences of letters or numbers like “abc”, numbers like “123”. - Avoid using personal info that can be found online. And whether you use passphrases or passwords - Do not reuse them elsewhere. - Do not share them with colleagues. - Enable Multi-Factor Authentication. - Use	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
	a dedicated password manager.		

Control ID	Control Description	AWS Config Rule	Guidance
5_SECURE ACCESS TO SYSTEMS	Encourage everyone to use a passphrase, a collection of at least three random common words combined into a phrase that provide a very good combination of memorability and security. If you opt for a typical password: - Make it long, with lower and upper case characters, possibly also numbers and special characters. - Avoid obvious, such as “password”, sequences of letters or numbers like “abc”, numbers like “123”. - Avoid using personal info that can be found online. And whether you use passphrases or passwords - Do not reuse them elsewhere. - Do not share them with colleagues. - Enable Multi-Factor Authentication. - Use	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	a dedicated password manager.		

Control ID	Control Description	AWS Config Rule	Guidance
5_SECURE ACCESS TO SYSTEMS	Encourage everyone to use a passphrase, a collection of at least three random common words combined into a phrase that provide a very good combination of memorability and security. If you opt for a typical password: - Make it long, with lower and upper case characters, possibly also numbers and special characters. - Avoid obvious, such as “password”, sequences of letters or numbers like “abc”, numbers like “123”. - Avoid using personal info that can be found online. And whether you use passphrases or passwords - Do not reuse them elsewhere. - Do not share them with colleagues. - Enable Multi-Factor Authentication. - Use	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	a dedicated password manager.		
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: KEEP SOFTWARE PATCHED AND UP TO DATE	Ideally using a centralized platform to manage patching. It is highly re commended for SMEs to: - Regularly update all of their software. - Turn on automatic updates whenever possible. - Identify software and hardware that requires manual updates. - Take into account mobile and IoT devices.	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elasticsearch Service (Amazon ES) domains.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon Elasticsearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	sagemaker-endpoint -configuration-kms- key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	sagemaker-notebook -instance-kms-key- configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferr ed over public networks, such as hotel or airport WiFi networks, ensure th at data is encrypted , either by employ ing a Virtual Private Network (VPN) or accessing websites over secure connectio ns using SSL/TLS p rotocol. Ensure their own websites are employing suitable encryption technol ogy to protect client data as it travels over the Internet.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
6_SECURE DEVICES: ENCRYPTION	Protect data by encrypting it. SMEs should ensure the data stored on mobile devices such as laptops, smartphones, and tables are encrypted. For data transferred over public networks, such as hotel or airport WiFi networks, ensure that data is encrypted, either by employing a Virtual Private Network (VPN) or accessing websites over secure connections using SSL/TLS protocol. Ensure their own websites are employing suitable encryption technology to protect client data as it travels over the Internet.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no condition s could result in unintended behavior.
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: EMPLOY FIREWALLS	Firewalls manage the traffic that enters and leaves a network a nd are a critical tool in protecting SMEs systems. Firewalls should be deployed to protect all critical systems, in particula r a firewall should be employed to protect the SME's network f rom the Internet.	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentia ls. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	elasticsearch-logs-to-cloudwatch	Ensure Amazon Elasticsearch service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7_SECURE YOUR NETWORK: REVIEW REMOTE ACCESS SOLUTIONS	SMEs should regularly review any remote access tools to ensure they are secure, particularly: - Ensure all remote access software is patched and up date. - Restrict remote access from suspiciou s geographical locat ions or certain IP addresses. - Restrict staff remote access only to the systems and computers they need for their work. - Enforce strong passwords for remote access and where pos sible enable multi-fac tor authentication. - Ensure monitorin g and alerting is enabled to warn of suspected attacks or unusual suspicious activity.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

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9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	backup-recovery-po int-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

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Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

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Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

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Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	rds-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
9_SECURE BACKUPS	To enable the recovery of key formation, backups s hould be maintaine d as they are an effective way to recover from disasters such as a ransomware attack. T he following backup rules should apply: - backup is regular and automated whenever possible, - backup is held separately from the SME's pro duction environme nt, - backups are encrypted, especiall y if they are going to be moved between locations, - the ability to regularly restore data from the backups is tested. Ideally, a regular test of a full restore from start to finish should be done.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
11_SECURE ONLINE SITES	It is essential that SMEs ensure that their online websites are configured and maintained in a secure manner an d that any personal data or financial details, such as credit card data, is appropriately protected. This will entail running regular security tests against the websites to identify any potential security weaknesse s and conductin g regular reviews to ensure the site is maintained and updated properly.	vuln-management-plan-exists(Process Check)	Ensure a vulnerabi lity management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment.

Template

The template is available on GitHub: Operational Best Practices for ENISA Cybersecurity guide for SMEs.

Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates,

are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Spain Esquema Nacional de Seguridad (ENS) Low framework controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more Spain ENS Low controls. A Spain ENS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the Spain ENS Low framework, as last updated on 2020/10/23.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 4.1.2.a); b); c)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Anexo II 4.1.2.a); b); c)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 4.1.2.a); b); c)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 4.1.2.a); b); c)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Anexo II 4.1.2.a); b); c)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Anexo II 4.1.2.a); b); c)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Anexo II 4.1.2.a); b); c)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Anexo II 4.1.2.a); b); c)	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 4.1.2.a); b); c)	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 4.1.2.a); b); c)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Anexo II 4.1.2.a); b); c)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Anexo II 4.1.2.b)	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.1.2.b)	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.1.2.b)	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.1.2.b)	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.1.a)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
Anexo II 4.2.1.a); b)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.4	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Anexo II 4.2.4	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.4	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Anexo II 4.2.4	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.BAJO.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.BAJO.c)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 4.2.6.BAJO.c)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.2.6.BAJO.c)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
Anexo II 4.2.6.BAJO.c)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.2.6.BAJO.c)	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
Anexo II 4.2.6.BAJO.c)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.2.6.BAJO.c)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
Anexo II 4.2.6.BAJO.c)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
Anexo II 4.2.6.BAJO.c)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7.BAJO	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
Anexo II 4.2.7.BAJO	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7.BAJO	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.2.7.BAJO	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.3.1	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.3.1	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.3.1	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
Anexo II 4.3.2.b)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Anexo II 4.3.2.b)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
Anexo II 4.3.2.b)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
Anexo II 4.3.2.b)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
Anexo II 4.3.2.b)	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Anexo II 4.3.2.b)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Anexo II 4.3.2.b)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Anexo II 4.3.2.b)	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Anexo II 4.3.2.b)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Anexo II 4.3.4.c)	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsibilities.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.3.8.BAJO	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
Anexo II 4.3.8.BAJO	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.3.8.BAJO	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
Anexo II 4.3.8.BAJO	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.3.8.BAJO	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
Anexo II 4.3.8.BAJO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
Anexo II 4.3.8.BAJO	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Anexo II 4.3.10.b)	cloud-trail-encryption-enab led	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.10.b)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Anexo II 4.3.10.d)	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Anexo II 4.6.1	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 4.6.2.BASICA	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
Anexo II 5.2.3	security-awareness-program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organizat ion from various security breaches or incidents.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3.BAJO.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 5.6.1.c)	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
Anexo II 5.6.1.c)	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 5.7.3	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Anexo II 5.7.3	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Anexo II 5.7.3	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.7.3	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
Anexo II 5.7.3	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Anexo II 5.7.3	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Anexo II 5.7.3	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.7.3	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 5.7.3	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
Anexo II 5.7.3	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
Anexo II 5.7.3	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 5.7.3	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
Anexo II 5.7.4	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.4	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
Anexo II 5.8.2	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.2	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Art. 14.4	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Art. 16	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Art. 16	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Art. 16	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Art. 16	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Art. 20.2	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
Art. 20.2	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
Art. 20.2	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
Art. 20.2	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsib ilities.
Art. 21.1	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Art. 21.1	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Art. 21.1	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Art. 21.1	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Art. 21.1	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Art. 21.1	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Art. 21.1	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Art. 21.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Art. 21.1	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Art. 21.1	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Art. 21.1	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Art. 21.1	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
Art. 21.1	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Art. 21.1	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Art. 21.1	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Art. 21.1	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Art. 21.1	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Art. 21.1	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Art. 21.1	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Art. 21.1	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 21.1	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Art. 21.1	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Art. 21.1	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Art. 22	autoscaling-launch-config-p ublic-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
Art. 22	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Art. 22	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Art. 22	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
Art. 22	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
Art. 22	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
Art. 22	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Art. 22	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
Art. 22	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
Art. 22	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Art. 22	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Art. 22	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Art. 22	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 22	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Art. 22	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Art. 22	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Art. 22	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Art. 22	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Art. 22	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Art. 23	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Art. 23	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Art. 23	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Art. 23	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Art. 23	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Art. 23	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Art. 23	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Art. 23	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Art. 23	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Art. 23	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Art. 23	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Art. 23	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Art. 25	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Art. 25	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
Art. 25	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
Art. 25	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
Art. 25	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	AWS Config Rule	Guidance
Art. 25	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
Art. 25	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
Art. 25	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
Art. 25	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Template

The template is available on GitHub: Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low.

Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Spain Esquema Nacional de Seguridad (ENS) Medium framework controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more Spain ENS Medium controls. A Spain ENS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the Spain ENS Medium framework, as last updated on 2020/10/23.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 4.1.2.a); b); c)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because

Control ID	AWS Config Rule	Guidance
		sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	rds-instance-deletion-prote ction-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 4.1.2.a); b); c)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 4.1.2.a); b); c)	cloud-trail-encryption-enab led	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.
Anexo II 4.1.2.a); b); c)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Anexo II 4.1.2.a); b); c)	cloudwatch-log-group-encryp ted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
Anexo II 4.1.2.a); b); c)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Anexo II 4.1.2.a); b); c)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 4.1.2.a); b); c)	elb-deletion-protection-ena bled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 4.1.2.a); b); c)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 4.1.2.a); b); c)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Anexo II 4.1.2.b)	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.1.2.b)	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.1.2.b)	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.1.2.b)	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.1.a)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
Anexo II 4.2.1.a); 4.2.1.b)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.4	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Anexo II 4.2.4	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.4	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Anexo II 4.2.4	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.c)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 4.2.6.BAJO.c)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.2.6.c)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.c)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Anexo II 4.2.6.c)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.c)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.2.6.c)	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Anexo II 4.2.6.c)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.c)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.2.6.c)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Anexo II 4.2.6.c)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.c)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
Anexo II 4.2.6.c)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
Anexo II 4.2.7	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.2.7	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.3.1	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.3.1	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.3.1	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.3.1	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
Anexo II 4.3.2.b)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Anexo II 4.3.2.b)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Anexo II 4.3.2.b)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Anexo II 4.3.2.b)	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
Anexo II 4.3.2.b)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Anexo II 4.3.2.b)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Anexo II 4.3.2.b)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Anexo II 4.3.2.b)	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Anexo II 4.3.2.b)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Anexo II 4.3.4.c)	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsibilities.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.6	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 4.3.7.a)	response-plan-exists-maintained (Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel. Having updated and formally documented response plans can assist in making sure response personnel understand roles, responsibilities and processes to be followed during an incident.
Anexo II 4.3.8	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Anexo II 4.3.8	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.3.8	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Anexo II 4.3.8	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.3.8	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Anexo II 4.3.8	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
Anexo II 4.3.8	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.3.8.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.3.10.b)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.10.b)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Anexo II 4.3.10.d)	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Anexo II 4.6.1	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 4.6.2	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
Anexo II 4.6.2	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 5.2.3	security-awareness-program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
Anexo II 5.4.2	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.2	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.4.2	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.2	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.4.2	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.2.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 5.4.3	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.4.3	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 5.6.1.c)	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
Anexo II 5.6.1.c)	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 5.7.3	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Anexo II 5.7.3	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Anexo II 5.7.3	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.7.3	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
Anexo II 5.7.3	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Anexo II 5.7.3	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Anexo II 5.7.3	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.7.3	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 5.7.3	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
Anexo II 5.7.3	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
Anexo II 5.7.3	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 5.7.3	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
Anexo II 5.7.4	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.4	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
Anexo II 5.8.2	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.2	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Anexo II 5.8.3.b)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.b)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Anexo II 5.8.3.b)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.b)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 5.8.3.b)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
Anexo II 5.8.3.b)	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.b)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.b)	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.b)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Art. 14.4	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Art. 16	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Art. 16	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Art. 16	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Art. 16	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Art. 20.2	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
Art. 20.2	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
Art. 20.2	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
Art. 20.2	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsib ilities.
Art. 21.1	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Art. 21.1	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Art. 21.1	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Art. 21.1	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Art. 21.1	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Art. 21.1	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Art. 21.1	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Art. 21.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Art. 21.1	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Art. 21.1	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Art. 21.1	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Art. 21.1	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
Art. 21.1	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Art. 21.1	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Art. 21.1	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Art. 21.1	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Art. 21.1	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Art. 21.1	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Art. 21.1	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Art. 21.1	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 21.1	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Art. 21.1	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Art. 21.1	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Art. 22	autoscaling-launch-config-p ublic-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
Art. 22	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Art. 22	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Art. 22	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
Art. 22	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
Art. 22	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Art. 22	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Art. 22	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.

Control ID	AWS Config Rule	Guidance
Art. 22	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
Art. 22	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Art. 22	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Art. 22	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Art. 22	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 22	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Art. 22	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Art. 22	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Art. 22	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Art. 22	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Art. 22	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Art. 23	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Art. 23	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Art. 23	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Art. 23	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Art. 23	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Art. 23	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Art. 23	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Art. 23	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Art. 23	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Art. 23	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Art. 23	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Art. 23	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Art. 24.1	guardduty-enabled-centraliz ed	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Art. 24.2	response-plan-exists-mainta ined (Process Check)	Ensure incident response plans are established, maintained, and distribut ed to responsible personnel. Having updated and formally documented response plans can assist in making sure response personnel understan d roles, responsibilities and processes to be followed during an incident.

Control ID	AWS Config Rule	Guidance
Art. 25	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Art. 25	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Art. 25	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.

Control ID	AWS Config Rule	Guidance
Art. 25	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
Art. 25	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
Art. 25	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	AWS Config Rule	Guidance
Art. 25	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
Art. 25	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Art. 25	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Template

The template is available on GitHub: Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium.

Operational Best Practices for Esquema Nacional de Seguridad (ENS) High

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Spain Esquema Nacional de Seguridad (ENS) High framework controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more Spain ENS High controls. A Spain ENS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the Spain ENS High framework, as last updated on 2021/07/09.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.1.ALTO	annual-risk-assessment-performed (Process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.
4.2.1.b)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
4.2.5.ALTO.a)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to

Control ID	AWS Config Rule	Guidance
		incorporate the principle of least functionality.
Anexo II 4.1.2.a); b); c)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 4.1.2.a); b); c)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Anexo II 4.1.2.a); b); c)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 4.1.2.a); b); c)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 4.1.2.a); b); c)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Anexo II 4.1.2.a); b); c)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Anexo II 4.1.2.a); b); c)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Anexo II 4.1.2.a); b); c)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Anexo II 4.1.2.a); b); c)	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 4.1.2.a); b); c)	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 4.1.2.a); b); c)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Anexo II 4.1.2.a); b); c)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 4.1.2.a); b); c)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 4.1.2.a); b); c)	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.a); b); c)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Anexo II 4.1.2.b)	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.1.2.b)	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.1.2.b)	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.1.2.b)	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.1.2.b)	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.1.a)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
Anexo II 4.2.4	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Anexo II 4.2.4	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.4	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Anexo II 4.2.4	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.BAJO.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.5.BAJO.c)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 4.2.6.ALTO.b)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
Anexo II 4.2.6.ALTO.b)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.ALTO.b)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.2.6.ALTO.b)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.2.6.BAJO.c)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Anexo II 4.2.6.BAJO.c)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.2.6.BAJO.c)	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Anexo II 4.2.6.BAJO.c)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.2.6.BAJO.c)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Anexo II 4.2.6.BAJO.c)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.2.6.BAJO.c)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.6.BAJO.c)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Anexo II 4.2.7.BAJO	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7.BAJO	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
Anexo II 4.2.7.BAJO	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.2.7.BAJO	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
Anexo II 4.3.1	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Anexo II 4.3.1	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.1	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
Anexo II 4.3.1	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
Anexo II 4.3.1	vpc-network-acl-unused-chec k	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitorin g for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
Anexo II 4.3.2.b)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Anexo II 4.3.2.b)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Anexo II 4.3.2.b)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
Anexo II 4.3.2.b)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
Anexo II 4.3.2.b)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
Anexo II 4.3.2.b)	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Anexo II 4.3.2.b)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Anexo II 4.3.2.b)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
Anexo II 4.3.2.b)	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Anexo II 4.3.2.b)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Anexo II 4.3.2.b)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.2.b)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Anexo II 4.3.4.c)	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsibilities.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.6	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 4.3.7.MEDIA.a)	response-plan-exists-maintained (Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel. Having updated and formally documented response plans can assist in making sure response personnel understand roles, responsibilities and processes to be followed during an incident.
Anexo II 4.3.8.BAJO	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Anexo II 4.3.8.BAJO	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.3.8.BAJO	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Anexo II 4.3.8.BAJO	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.3.8.BAJO	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Anexo II 4.3.8.BAJO	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.3.8.BAJO	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.BAJO	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Anexo II 4.3.8.MEDIO	elasticsearch-logs-to-cloud watch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.MEDIO	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Anexo II 4.3.8.MEDIO	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.MEDIO	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Anexo II 4.3.8.MEDIO	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Anexo II 4.3.8.MEDIO	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.MEDIO	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Anexo II 4.3.8.MEDIO	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Anexo II 4.3.8.MEDIO	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 4.3.8.MEDIO	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.8.MEDIO	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Anexo II 4.3.10.b)	cloud-trail-encryption-enab led	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.
Anexo II 4.3.10.b)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
Anexo II 4.3.10.d)	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
Anexo II 4.6.1	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
Anexo II 4.6.2.ALTO	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
Anexo II 4.6.2.BASICA	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
Anexo II 4.6.2.MEDIA	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
Anexo II 5.2.3	security-awareness-program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
Anexo II 5.2.4	security-awareness-program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	AWS Config Rule	Guidance
Anexo II 5.2.5	security-awareness-program-exists (Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organizat ion from various security breaches or incidents.
Anexo II 5.4.2.MEDIO	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2.MEDIO	elbv2-acm-certificate-requi red	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.2.MEDIO	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2.MEDIO	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2.MEDIO	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.4.2.MEDIO	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.2.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 5.4.2.MEDIO	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.2.MEDIO	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3.BAJO.a)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Anexo II 5.4.3.MEDIO	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3.MEDIO	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.4.3.MEDIO	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3.MEDIO	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3.MEDIO	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.4.3.MEDIO	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
Anexo II 5.4.3.MEDIO	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Anexo II 5.4.3.MEDIO	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.4.3.MEDIO	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.6.1.c)	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
Anexo II 5.6.1.c)	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Anexo II 5.7.3	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
Anexo II 5.7.3	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
Anexo II 5.7.3	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Anexo II 5.7.3	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Anexo II 5.7.3	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
Anexo II 5.7.3	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Anexo II 5.7.3	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Anexo II 5.7.3	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Anexo II 5.7.3	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Anexo II 5.7.3	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
Anexo II 5.7.3	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Anexo II 5.7.3	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
Anexo II 5.7.3	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.3	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Anexo II 5.7.3	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
Anexo II 5.7.4	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
Anexo II 5.7.4	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
Anexo II 5.8.2	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.2	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Anexo II 5.8.3.MEDIO.b)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.MEDIO.b)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
Anexo II 5.8.3.MEDIO.b)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.MEDIO.b)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Anexo II 5.8.3.MEDIO.b)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
Anexo II 5.8.3.MEDIO.b)	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.MEDIO.b)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.MEDIO.b)	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Anexo II 5.8.3.MEDIO.b)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Art. 14.4	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
Art. 16	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
Art. 16	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Art. 16	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Art. 16	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
Art. 20.2	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
Art. 20.2	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
Art. 20.2	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
Art. 20.2	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsib ilities.
Art. 21.1	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Art. 21.1	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
Art. 21.1	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
Art. 21.1	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Art. 21.1	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Art. 21.1	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Art. 21.1	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Art. 21.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
Art. 21.1	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
Art. 21.1	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
Art. 21.1	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Art. 21.1	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
Art. 21.1	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Art. 21.1	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Art. 21.1	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Art. 21.1	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
Art. 21.1	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
Art. 21.1	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Art. 21.1	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
Art. 21.1	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
Art. 21.1	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 21.1	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
Art. 21.1	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Art. 21.1	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
Art. 21.1	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Art. 21.1	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
Art. 22	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
Art. 22	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Art. 22	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Art. 22	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Art. 22	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
Art. 22	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
Art. 22	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
Art. 22	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Art. 22	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
Art. 22	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
Art. 22	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Art. 22	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
Art. 22	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Art. 22	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Art. 22	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
Art. 22	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Art. 22	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Art. 22	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
Art. 22	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Art. 22	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
Art. 22	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Art. 23	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Art. 23	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Art. 23	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Art. 23	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Art. 23	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Art. 23	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Art. 23	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Art. 23	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Art. 23	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
Art. 23	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Art. 23	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
Art. 23	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
Art. 24.2	response-plan-exists-mainta ined (Process Check)	Ensure incident response plans are established, maintained, and distribut ed to responsible personnel. Having updated and formally documented response plans can assist in making sure response personnel understan d roles, responsibilities and processes to be followed during an incident.
Art. 24.1	guardduty-enabled-centraliz ed	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
Art. 25	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Art. 25	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Art. 25	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.

Control ID	AWS Config Rule	Guidance
Art. 25	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
Art. 25	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
Art. 25	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
Art. 25	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	AWS Config Rule	Guidance
Art. 25	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
Art. 25	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Art. 25	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Template

The template is available on GitHub: Operational Best Practices for Esquema Nacional de Seguridad (ENS) High.

Operational Best Practices for FDA Title 21 CFR Part 11

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Title 21 of the Code of Federal Regulations (CFR) Part 11 and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more FDA Title 21 CFR Part 11 controls. A FDA Title 21 CFR Part 11 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie

Control ID	Control Description	AWS Config Rule	Guidance
	of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:		s your backup management and enables you to meet your business and regulatory backup compliance requirements.
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
11.1	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following:	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

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Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performan ce, and the ability to discern invalid or altered records.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

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11.10(a)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

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11.10(c)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (c) Protection of records to enable their accurate and ready retrieval throughout the records retention period.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (d) Limiting system access to authorized individuals.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

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11.10(d)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (d) Limiting system access to authorized individuals.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

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11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (g) Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(g)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (g) Use of authority checks to ensure that only authorize d individuals can use the system, electroni cally sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(h)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (h) Use of device (for example, terminal) checks to determine, as appropriate, the validity of the source of data input or operational instruction.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(h)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (h) Use of device (for example, terminal) checks to determine, as appropriate, the validity of the source of data input or operational instruction.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(h)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (h) Use of device (for example, terminal) checks to determine, as appropriate, the validity of the source of data input or operational instruction.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(i)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following : (i) Determination that persons who develop, maintain, or use electronic record/ electronic signature systems have the education, training, and experience to perform their assigned tasks.	security-awareness -program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documentation.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

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Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

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	trail that documents time-sequenced development and modification of systems documentation.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

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	trail that documents time-sequenced development and modification of systems documenta tion.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

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Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

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Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

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	trail that documents time-sequenced development and modification of systems documentation.		

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

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	trail that documents time-sequenced development and modification of systems documenta tion.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
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Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documenta tion.		

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Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documenta tion.		

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11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documentation.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documentation.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documenta tion.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropria te controls over systems documenta tion including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documenta tion.		

Control ID	Control Description	AWS Config Rule	Guidance
11.10(k)	Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record as not genuine. Such procedures and controls shall include the following: (k) Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
	trail that documents time-sequenced development and modification of systems documentation.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature components. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collaboration of two or more individuals.		sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.2	(a) Electronic signatures that are not based upon biometrics shall: (1) Employ at least two distinct identification components such as an identification code and password. (i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual. (ii) When an individual executes one or more signings not performed during a single, continuous period of controlle	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	d system access, each signing shall be executed using all of the electronic signature component s. (2) Be used only by their genuine owners; and (3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collabora tion of two or more individuals.		

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	cmk-backing-key-ro tation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	dynamodb-table-enc rypted-kms	Ensure that encryptio n is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	kinesis-stream-enc rypted	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Kinesis Streams.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

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11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	rds-storage-encryp ted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	sagemaker-endpoint -configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.3	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authentic ity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in 11.10, as appropria te, and additiona l measures such as document encryption and use of appropria te digital signature standards to ensure, as necessary under the circumstances, record authentic ity, integrity, and confidentiality.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signatures based upon use of identification codes in combination with passwords shall employ controls to ensure their security and integrity. Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signatures based upon use of identification codes in combination with passwords shall employ controls to ensure their security and integrity. Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signatures based upon use of identification codes in combination with passwords shall employ controls to ensure their security and integrity. Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(b)	Persons who use electronic signatures based upon use of identification codes in combination with passwords shall employ controls to ensure their security and integrity. Such controls shall include: (b) Ensuring that identification code and password issuances are periodically checked, recalled, or revised (for example, to cover such events as password aging).	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(d)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (d) Use of transacti on safeguards to prevent unauthori zed use of passwords and/or identific ation codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(d)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (d) Use of transacti on safeguards to prevent unauthori zed use of passwords and/or identific ation codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(d)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (d) Use of transacti on safeguards to prevent unauthori zed use of passwords and/or identific ation codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.300(d)	Persons who use electronic signature s based upon use of identification codes in combinati on with passwords shall employ controls to ensure their security and integrity . Such controls shall include: (d) Use of transacti on safeguards to prevent unauthori zed use of passwords and/or identific ation codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Template

The template is available on GitHub: Operational Best Practices for FDA Title 21 CFR Part 11.

Operational Best Practices for FedRAMP(Low)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Federal Risk and Authorization Management Program (FedRAMP) Low Baseline Controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more FedRAMP controls. A FedRAMP control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
AC-2	ACCOUNT MANAGEMENT	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and

Control ID	Control Description	AWS Config Rule	Guidance
			separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AC-2	ACCOUNT MANAGEMENT	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.
AC-2	ACCOUNT MANAGEMENT	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2	ACCOUNT MANAGEMENT	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-2	ACCOUNT MANAGEMENT	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC-2	ACCOUNT MANAGEMENT	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	ACCOUNT MANAGEMENT	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
AC-3	ACCESS ENFORCEMENT	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-3	ACCESS ENFORCEMENT	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
AC-3	ACCESS ENFORCEMENT	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC-3	ACCESS ENFORCEMENT	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-3	ACCESS ENFORCEMENT	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-3	ACCESS ENFORCEMENT	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-3	ACCESS ENFORCEMENT	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-3	ACCESS ENFORCEMENT	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-3	ACCESS ENFORCEMENT	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-3	ACCESS ENFORCEMENT	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	ACCESS ENFORCEMENT	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-17	REMOTE ACCESS	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AC-17	REMOTE ACCESS	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-17	REMOTE ACCESS	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-17	REMOTE ACCESS	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-17	REMOTE ACCESS	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
AC-17	REMOTE ACCESS	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-17	REMOTE ACCESS	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-17	REMOTE ACCESS	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-17	REMOTE ACCESS	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17	REMOTE ACCESS	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-2	AUDIT EVENTS	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-2	AUDIT EVENTS	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-2	AUDIT EVENTS	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	AUDIT EVENTS	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-3	CONTENT OF AUDIT RECORDS	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-3	CONTENT OF AUDIT RECORDS	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-3	CONTENT OF AUDIT RECORDS	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-3	CONTENT OF AUDIT RECORDS	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	CONTENT OF AUDIT RECORDS	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6	AUDIT REVIEW, ANALYSIS, AND REPORTING	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-9	PROTECTION OF AUDIT INFORMATION	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	PROTECTION OF AUDIT INFORMATION	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AU-9	PROTECTION OF AUDIT INFORMATION	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	PROTECTION OF AUDIT INFORMATION	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
AU-9	PROTECTION OF AUDIT INFORMATION	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
AU-11	AUDIT RECORD RETENTION	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
AU-12	AUDIT GENERATION	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-12	AUDIT GENERATION	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-12	AUDIT GENERATION	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-12	AUDIT GENERATION	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	AUDIT GENERATION	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
CA-7	CONTINUOUS MONITORING	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CA-7	CONTINUOUS MONITORING	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
CA-7	CONTINUOUS MONITORING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	CONTINUOUS MONITORING	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
CM-2	BASELINE CONFIGURATION	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
CM-2	BASELINE CONFIGURATION	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CM-2	BASELINE CONFIGURATION	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CM-2	BASELINE CONFIGURATION	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
CM-2	BASELINE CONFIGURATION	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CM-2	BASELINE CONFIGURATION	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CM-2	BASELINE CONFIGURATION	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CM-2	BASELINE CONFIGURATION	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2	BASELINE CONFIGURATION	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	BASELINE CONFIGURATION	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CM-2	BASELINE CONFIGURATION	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7	LEAST FUNCTIONALITY	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
CM-7	LEAST FUNCTIONALITY	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7	LEAST FUNCTIONALITY	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8	INFORMATION SYSTEM COMPONENT INVENTORY	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8	INFORMATION SYSTEM COMPONENT INVENTORY	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8	INFORMATION SYSTEM COMPONENT INVENTORY	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CM-8	INFORMATION SYSTEM COMPONENT INVENTORY	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-9	INFORMATION SYSTEM BACKUP	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	INFORMATION SYSTEM BACKUP	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-9	INFORMATION SYSTEM BACKUP	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	INFORMATION SYSTEM RECOVERY AND RECON STITUTION	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	IDENTIFICATION AND AUTHENTICATION (ORGANIZATIONAL USERS)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-5	AUTHENTICATOR MANAGEMENT	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5	AUTHENTICATOR MANAGEMENT	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4	INCIDENT HANDLING	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4	INCIDENT HANDLING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4	INCIDENT HANDLING	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4	INCIDENT HANDLING	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4	INCIDENT HANDLING	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6	INCIDENT REPORTING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6	INCIDENT REPORTING	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6	INCIDENT REPORTING	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7	INCIDENT RESPONSE ASSISTANCE	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7	INCIDENT RESPONSE ASSISTANCE	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7	INCIDENT RESPONSE ASSISTANCE	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	VULNERABILITY SCANNING	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	VULNERABILITY SCANNING	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	VULNERABILITY SCANNING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SA-3	SYSTEM DEVELOPMENT LIFE CYCLE	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3	SYSTEM DEVELOPMENT LIFE CYCLE	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3	SYSTEM DEVELOPMENT LIFE CYCLE	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
SC-5	DENIAL OF SERVICE PROTECTION	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
SC-5	DENIAL OF SERVICE PROTECTION	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
SC-5	DENIAL OF SERVICE PROTECTION	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
SC-5	DENIAL OF SERVICE PROTECTION	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	DENIAL OF SERVICE PROTECTION	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SC-7	BOUNDARY PROTECTION	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7	BOUNDARY PROTECTION	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-7	BOUNDARY PROTECTION	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7	BOUNDARY PROTECTION	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
SC-7	BOUNDARY PROTECTION	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7	BOUNDARY PROTECTION	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-7	BOUNDARY PROTECTION	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	BOUNDARY PROTECTION	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
SC-12	CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC-12	CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	CRYPTOGRAPHIC PROTECTION	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SC-13	CRYPTOGRAPHIC PROTECTION	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	CRYPTOGRAPHIC PROTECTION	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-13	CRYPTOGRAPHIC PROTECTION	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	CRYPTOGRAPHIC PROTECTION	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC-13	CRYPTOGRAPHIC PROTECTION	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	FLAW REMEDIATION	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	FLAW REMEDIATION	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	FLAW REMEDIATION	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2	FLAW REMEDIATION	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	FLAW REMEDIATION	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
SI-3	FLAW REMEDIATION	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	FLAW REMEDIATION	ecs-task-definition-memory-hard-limit	Limiting the maximum memory available to your Amazon Elastic Container Service (ECS) containers ensures that your resource usage cannot be abused in the event of malicious access to your containers.
SI-4	INFORMATION SYSTEM MONITORING	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORIN G	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORIN G	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
SI-4	INFORMATION SYSTEM MONITORIN G	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SI-4	INFORMATION SYSTEM MONITORING	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
SI-4	INFORMATION SYSTEM MONITORING	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	INFORMATION SYSTEM MONITORING	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	SECURITY ALERTS, ADVISORIES, AND DIRECTIVES	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	SECURITY ALERTS, ADVISORIES, AND DIRECTIVES	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	SECURITY ALERTS, ADVISORIES, AND DIRECTIVES	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	SECURITY ALERTS, ADVISORIES, AND DIRECTIVES	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
SI-12	INFORMATION HANDLING AND RETENTION	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
SI-12	INFORMATION HANDLING AND RETENTION	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	INFORMATION HANDLING AND RETENTION	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
SI-16	MEMORY PROTECTIO N	ecs-task-definition-memory-hard-limit	Limiting the maximum memory available to your Amazon Elastic Container Service (ECS) containers ensures that your resource usage cannot be abused in the event of malicious access to your containers.

Template

The template is available on GitHub: Operational Best Practices for FedRAMP(Low).

Operational Best Practices for FedRAMP(Moderate)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Federal Risk and Authorization Management Program (FedRAMP) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more FedRAMP controls. A FedRAMP control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This Conformance Pack was validated by AWS Security Assurance Services LLC (AWS SAS), which is a team of Payment Card Industry Qualified Security Assessors (QSAs), HITRUST Certified Common Security Framework Practitioners (CCSFPs), and compliance professionals certified to provide guidance and assessments for various industry frameworks. AWS SAS professionals designed this Conformance Pack to enable a customer to align to a subset of the FedRAMP controls.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of

Control ID	Control Description	AWS Config Rule	Guidance
			inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(3)	The information system automatic ally disables inactive accounts after 90 days for users.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(3)	The information system automatic ally disables inactive accounts after 90 days for users.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged users in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example, key management,	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	account managemen t, network and system administr ation, database administration, and web administration.		
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentia ls. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authoriza tions for logical access to information and system resources in accordance with applicable access control policies.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumven ting, or altering implemented security safeguards/counter measures.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-17(1)	The information system monitors and controls remote access methods.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-17(1)	The information system monitors and controls remote access methods.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-17(1)	The information system monitors and controls remote access methods.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-17(1)	The information system monitors and controls remote access methods.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-17(1)	The information system monitors and controls remote access methods.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9(2)	The information system backs up audit records at least weekly onto a physically different system or system component than the system or component being audited.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
AU-9(2)	The information system backs up audit records at least weekly onto a physically different system or system component than the system or component being audited.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
AU-11	The organization retains audit records for at least 90 days to provide support for after-the-fact investigations of security incidents and to meet regulatory and organizational information retention requirements.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored ; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	The organization updates the inventory of information system components as an integral part of component installations, removals, and information system updates.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	The organization updates the inventory of information system components as an integral part of component installations, removals, and information system updates.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ebs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	efs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/ O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)	(1) The information system implements multifactor authentic ation for network access to privilege d accounts. (2) The information system implements multifact or authentication for network access to non- privileged accounts.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentia ls. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-2(1)(2)	(1) The information system implements multifactor authentic ation for network access to privilege d accounts. (2) The information system implements multifact or authentication for network access to non- privileged accounts.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)	(1) The information system implements multifactor authentication for network access to privileged accounts. (2) The information system implements multifactor authentication for network access to non- privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)	(1) The information system implements multifactor authentic ation for network access to privilege d accounts. (2) The information system implements multifact or authentication for network access to non- privileged accounts.	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-2(1)	(1) The information system implements multifactor authentic ation for network access to privileged accounts.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	(1) The information system implements multifactor authentication for network access to privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	(1) The information system implements multifactor authentication for network access to privileged accounts.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	(1) The information system implements multifactor authentication for network access to privileged accounts.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)(a)(d)(e)	The information system, for password-based authentication: a. Enforces minimum password complexit y of [Assignment: organization-defined requirements for case sensitivity, number of characters, mix of upper-case letters, lower-case letters, numbers, and special characters, including minimum requireme nts for each type]; d. Enforces password minimum and maximum lifetime restricti ons of [Assignme nt: organization-defined numbers for lifetime minimum, lifetime maximum]; e. Prohibits password reuse for 24 generations	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(4)	The organization employs automated tools to determine if password authentic ators are sufficien tly strong to satisfy [Assignment: organization-defined requirements].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA-5(7)	The organization ensures that unencrypted static authenticators are not embedded in applications or access scripts or stored on function keys.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availabil ity of incident response-related information and support.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availability of incident response-related information and support.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availabil ity of incident response-related information and support.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications monthly [operating system/infrastructure; monthly web applications and databases] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring vulnerability impact; c. Analyzes vulnerability scan reports	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	and results from security control assessments; d. Remediates legitimate vulnerabilities: high-risk vulnerabilities mitigated within thirty (30) days from date of discovery; moderate-risk vulnerabilities mitigated within ninety (90) days from date of discovery; low risk vulnerabilities mitigated within one hundred and eighty (180) days from date of discovery , in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e.,		

Control ID	Control Description	AWS Config Rule	Guidance
	systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications [Assignment: organization-defined frequency and/or randomly in accordance with organization-defined process] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	vulnerability impact; c. Analyzes vulnerability scan reports and results from security control assessments; d. Remediates legitimate vulnerabilities [Assignment: organization-defined response times], in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e., systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service development, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security impacts of such changes; and e.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organizat ion requires the developer of the information system, system component , or information system service to: a. Perform configura tion managemen t during system, component, or service developme nt, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configura tion management]; c. Implement only organization-appro ved changes to the system, component , or service; d. Document approved changes to the system, component , or service and the potential security impacts of such changes; and e.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service development, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security impacts of such changes; and e.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organizat ion requires the developer of the information system, system component , or information system service to: a. Perform configura tion managemen t during system, component, or service developme nt, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configura tion management]; c. Implement only organization-appro ved changes to the system, component , or service; d. Document approved changes to the system, component , or service and the potential security impacts of such changes; and e.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-4	The information system prevents unauthorized and unintended information transfer from shared system resources.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7(3)	The organization limits the number of external network connections to the information system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(3)	The organization limits the number of external network connections to the information system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	The information system at managed interfaces denies network communications traffic by default and allows network communications traffic by exception(i.e., deny all, permit by exception). Supplemental Guidance: This control enhancement applies to both inbound and outbound network communications traffic. A deny-all, permit-by-exception network communications traffic policy ensures that only those connections which are essential and approved are allowed.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implement s FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system components with regard to flaw remediation.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system component s with regard to flaw remediation.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system components with regard to flaw remediation.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system components with regard to flaw remediation.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	The organization: a. Employs malicious code protection mechanisms at information system entry and exit points to detect and eradicate malicious code; b. Updates malicious code protectio n mechanisms whenever new releases are available in accordance with organizat ional configuration management policy and procedures; c. Configures malicious code protection mechanisms to: 1. Perform periodic scans of the informati on system [Assignme nt: organization-defined frequency] and real-time scans of files from external sources at [Selection(one or more); endpoint; network entry/exit points] as the files	codebuild-project-envvar-awscred-check	Ensure authentic ation credentials AWS_ACCESS_KEY_ID and AWS_SECRE T_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintende d data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
	are downloaded, opened, or executed in accordance with organizational security policy; and 2. [Selectio n(one or more): block malicious code; quarantine malicious code; send alert to administr ator; [Assignment: organization-defined action]] in response to malicious code detection; and d. Addresses the receipt of false positives during malicious code detection and eradication and the resulting potential impact on the availability of the information system. Supplemental Guidance: Informati on system entry and exit points include, for example, firewalls, electroni c mail servers, web servers, proxy servers, remote-access servers, workstations,		

Control ID	Control Description	AWS Config Rule	Guidance
	notebook computers , and mobile devices. Malicious code includes, for example, viruses, worms, Trojan horses, and spyware. Malicious code can also be encoded in various formats(for example, UUENCODE, Unicode), contained within compresse d or hidden files, or hidden in files using steganogr aphy. Malicious code can be transport ed by different means including, for example, web accesses, electroni c mail, electronic mail attachments, and portable storage devices. Malicious code insertions occur through the exploitat ion of information system vulnerabi lities. Malicious code protection mechanisms include, for example, anti-viru s signature definitio		

Control ID	Control Description	AWS Config Rule	Guidance
	ns and reputation-based technologies. A variety of technologies and methods exist to limit or eliminate the effects of malicious code. Pervasive configuration management and comprehensive software integrity controls may be effective in preventing execution of unauthorized code. In addition to commercial off-the-shelf software, malicious code may also be present in custom-built software. This could include, for example, logic bombs, back doors, and other types of cyber attacks that could affect organizational missions/business functions. Traditional malicious code protection mechanisms cannot always detect such code. In these		

Control ID	Control Description	AWS Config Rule	Guidance
	situations, organizat ions rely instead on other safeguard s including, for example, secure coding practices , configuration management and control, trusted procurement processes, and monitoring practices to help ensure that software does not perform functions other than the functions intended. Organizations may determine that in response to the detection of malicious code, different actions may be warranted. For example, organizat ions can define actions in response to malicious code detection during periodic scans, actions in response to detection of malicious downloads , and/or actions in response to detection		

Control ID	Control Description	AWS Config Rule	Guidance
	of maliciousness when attempting to open or execute files. Related controls: CM-3, MP-2, SA-4, SA-8, SA-12, SA-13, SC-7, SC-26, SC-44, SI-2, SI-4, SI-7. References: NIST Special Publication 800-83.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	The organization: a. Employs malicious code protection mechanisms at information system entry and exit points to detect and eradicate malicious code; b. Updates malicious code protectio n mechanisms whenever new releases are available in accordance with organizat ional configuration management policy and procedures; c. Configures malicious code protection mechanisms to: 1. Perform periodic scans of the informati on system [Assignme nt: organization-defined frequency] and real-time scans of files from external sources at [Selection(one or more); endpoint; network entry/exit points] as the files	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
	are downloaded, opened, or executed in accordance with organizational security policy; and 2. [Selectio n(one or more): block malicious code; quarantine malicious code; send alert to administr ator; [Assignment: organization-defined action]] in response to malicious code detection; and d. Addresses the receipt of false positives during malicious code detection and eradication and the resulting potential impact on the availability of the information system. Supplemental Guidance: Informati on system entry and exit points include, for example, firewalls, electroni c mail servers, web servers, proxy servers, remote-access servers, workstations,		

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	notebook computers , and mobile devices. Malicious code includes, for example, viruses, worms, Trojan horses, and spyware. Malicious code can also be encoded in various formats(for example, UUENCODE, Unicode), contained within compresse d or hidden files, or hidden in files using steganogr aphy. Malicious code can be transport ed by different means including, for example, web accesses, electroni c mail, electronic mail attachments, and portable storage devices. Malicious code insertions occur through the exploitat ion of information system vulnerabi lities. Malicious code protection mechanisms include, for example, anti-viru s signature definitio		

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	ns and reputation-based technologies. A variety of technologies and methods exist to limit or eliminate the effects of malicious code. Pervasive configuration management and comprehensive software integrity controls may be effective in preventing execution of unauthorized code. In addition to commercial off-the-shelf software, malicious code may also be present in custom-built software. This could include, for example, logic bombs, back doors, and other types of cyber attacks that could affect organizational missions/business functions. Traditional malicious code protection mechanisms cannot always detect such code. In these		

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	situations, organizat ions rely instead on other safeguard s including, for example, secure coding practices , configuration management and control, trusted procurement processes, and monitoring practices to help ensure that software does not perform functions other than the functions intended. Organizations may determine that in response to the detection of malicious code, different actions may be warranted. For example, organizat ions can define actions in response to malicious code detection during periodic scans, actions in response to detection of malicious downloads , and/or actions in response to detection		

Control ID	Control Description	AWS Config Rule	Guidance
	of maliciousness when attempting to open or execute files. Related controls: CM-3, MP-2, SA-4, SA-8, SA-12, SA-13, SC-7, SC-26, SC-44, SI-2, SI-4, SI-7. References: NIST Special Publication 800-83.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	The organization: a. Employs malicious code protection mechanisms at information system entry and exit points to detect and eradicate malicious code; b. Updates malicious code protectio n mechanisms whenever new releases are available in accordance with organizat ional configuration management policy and procedures; c. Configures malicious code protection mechanisms to: 1. Perform periodic scans of the informati on system [Assignme nt: organization-defined frequency] and real-time scans of files from external sources at [Selection(one or more); endpoint; network entry/exit points] as the files	ecs-task-definition-memory-hard-limit	Limiting the maximum memory available to your Amazon Elastic Container Service (ECS) containers ensures that your resource usage cannot be abused in the event of malicious access to your containers.

Control ID	Control Description	AWS Config Rule	Guidance
	are downloaded, opened, or executed in accordance with organizational security policy; and 2. [Selectio n(one or more): block malicious code; quarantine malicious code; send alert to administr ator; [Assignment: organization-defined action]] in response to malicious code detection; and d. Addresses the receipt of false positives during malicious code detection and eradication and the resulting potential impact on the availability of the information system. Supplemental Guidance: Informati on system entry and exit points include, for example, firewalls, electroni c mail servers, web servers, proxy servers, remote-access servers, workstations,		

Control ID	Control Description	AWS Config Rule	Guidance
	notebook computers , and mobile devices. Malicious code includes, for example, viruses, worms, Trojan horses, and spyware. Malicious code can also be encoded in various formats(for example, UUENCODE, Unicode), contained within compresse d or hidden files, or hidden in files using steganogr aphy. Malicious code can be transport ed by different means including, for example, web accesses, electroni c mail, electronic mail attachments, and portable storage devices. Malicious code insertions occur through the exploitat ion of information system vulnerabi lities. Malicious code protection mechanisms include, for example, anti-viru s signature definitio		

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	ns and reputation-based technologies. A variety of technologies and methods exist to limit or eliminate the effects of malicious code. Pervasive configuration management and comprehensive software integrity controls may be effective in preventing execution of unauthorized code. In addition to commercial off-the-shelf software, malicious code may also be present in custom-built software. This could include, for example, logic bombs, back doors, and other types of cyber attacks that could affect organizational missions/business functions. Traditional malicious code protection mechanisms cannot always detect such code. In these		

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	of maliciousness when attempting to open or execute files. Related controls: CM-3, MP-2, SA-4, SA-8, SA-12, SA-13, SC-7, SC-26, SC-44, SI-2, SI-4, SI-7. References: NIST Special Publication 800-83.		
SI-4(1)	The organization connects and configures individual intrusion detection tools into an information system-wide intrusion detection system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

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SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives information system security alerts, advisories, and directives from [Assignment: organization-defined external organizations] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignment: organization-defined personnel or roles]; [Assignment: organization-defined elements within the organization]; [Assignment: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives informati on system security alerts, advisorie s, and directives from [Assignment: organization-defin ed external organizat ions] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignme nt: organization-defined personnel or roles]; [Assignme nt: organization-defined elements within the organizat ion]; [Assignme nt: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives information system security alerts, advisories, and directives from [Assignment: organization-defined external organizations] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignment: organization-defined personnel or roles]; [Assignment: organization-defined elements within the organization]; [Assignment: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives informati on system security alerts, advisorie s, and directives from [Assignment: organization-defin ed external organizat ions] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignme nt: organization-defined personnel or roles]; [Assignme nt: organization-defined elements within the organizat ion]; [Assignme nt: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7	The organization employs integrity verification tools to detect unauthorized changes to [Assignment: organization-defined software, firmware, and information].	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-16	The information system implements [Assignment: organization-defined security safeguards] to protect its memory from unauthorized code execution. Supplemental Guidance: Some adversaries launch attacks with the intent of executing code in non- executable regions of memory or in memory locations that are prohibited. Security safeguards employed to protect memory include, for example, data execution prevention and address space layout randomization. Data execution prevention safeguards can either be hardware-enforced or software-enforced with hardware providing the greater strength of mechanism.	ecs-task-definition-memory-hard-limit	Limiting the maximum memory available to your Amazon Elastic Container Service (ECS) containers ensures that your resource usage cannot be abused in the event of malicious access to your containers.

Control ID	Control Description	AWS Config Rule	Guidance
	Related controls: AC-25, SC-3. Control Enhancements: None. References: None.		

Template

The template is available on GitHub: Operational Best Practices for FedRAMP(Moderate).

Operational Best Practices for FedRAMP (High Part 1)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Federal Risk and Authorization Management Program (FedRAMP) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more FedRAMP controls. A FedRAMP control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes

Control ID	Control Description	AWS Config Rule	Guidance
			the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
AC-17(1)	The information system monitors and controls remote access methods.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-17(1)	The information system monitors and controls remote access methods.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-17(1)	The information system monitors and controls remote access methods.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-17(1)	The information system monitors and controls remote access methods.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implement s cryptographic mechanisms to protect the confident iality and integrity of remote access sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implement s cryptographic mechanisms to protect the confident iality and integrity of remote access sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	elb-acm-certificate-required	POPULATE THIS
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as per organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(3)	The information system automatic ally disables inactive accounts after 90 days for user accounts.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(3)	The information system automatic ally disables inactive accounts after 90 days for user accounts.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organizat ion: f. Creates, enables, modifies, disables, and removes information system accounts in accordanc e with [Assignment: organization-defin ed procedures or conditions].	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as per organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
AC-2(j)	The organization: j. Reviews accounts for compliance with account management requirements [Assignment: organization-defined frequency].	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as per organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protectio n on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account management requirements [Assignment: organization-defined frequency].	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-2(j)	The organization: j. Reviews accounts for compliance with account management requirements [Assignment: organization-defined frequency].	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authoriza tions for logical access to information and system resources in accordance with applicable access control policies.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(2)	The information system requires the use of non-privileged accounts when accessing nonsecurity functions limits exposure when operating from within privileged accounts or roles	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6(2)	The information system requires the use of non-privileged accounts when accessing nonsecurity functions limits exposure when operating from within privileged accounts or roles	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(2)	The information system requires the use of non-privileged accounts when accessing nonsecurity functions limits exposure when operating from within privileged accounts or roles	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-6(9)	The information system logs the execution of privileged functions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
AC-6(9)	The information system logs the execution of privileged functions.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	The information system logs the execution of privileged functions.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AU-11	The organization retains audit records for at least 90 days to provide support for after-the-fact investigations of security incidents and to meet regulatory and organizational information retention requirements.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
AU-12(a)(c)	The information system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizat ional processes for investigation and response to suspiciou s activities. (3) The organization analyzes and correlates audit records across different repositor ies to gain organizat ion-wide situational awareness.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organizat ion analyzes and correlates audit records across different repositor ies to gain organizat ion-wide situational awareness.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organizat ion analyzes and correlates audit records across different repositor ies to gain organizat ion-wide situational awareness.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	The organizat ion analyzes and correlates audit records across different repositor ies to gain organizat ion-wide situational awareness.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7	The information system provides and implements an audit record reduction and report generatio n capability that: a. Supports on-demand audit record review, analysis, and reporting requireme nts and after-the-fact investigations of incidents; and b. Does not alter the original content or time ordering of audit records.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7	The information system provides and implements an audit record reduction and report generation capability that: a. Supports on-demand audit record review, analysis, and reporting requirements and after-the-fact investigations of incidents; and b. Does not alter the original content or time ordering of audit records.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9(2)	The information system backs up audit records at least weekly onto a physically different system or system component than the system or component being audited.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
AU-9(2)	The information system backs up audit records at least weekly onto a physically different system or system component than the system or component being audited.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The information system provides audit record generation capability for the event types the system is capable of auditing as defined in AU-2a on [Assignment: organization-defined system components]; b. Allow [Assignment: organization-defined personnel or roles] to select the event types that are to be logged by specific components of the system; and c. Generate audit records for the event types defined in AU-2c that include the audit record content defined in AU-3.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents, and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
CM-2	The organization develops, documents, and maintains under configuration control, a current baseline configuration of the information system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	The organization updates the inventory of information system components as an integral part of component installations, removals, and information system updates.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	The organization updates the inventory of information system components as an integral part of component installations, removals, and information system updates.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CM-8(3)(a)	The organization: a. Employs automated mechanisms continuously, using automated mechanisms with a maximum five-minute delay in detection, to detect the presence of unauthorized hardware, software, and firmware components within the information system	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-6 (1)	The organization identifies an alternate storage site that is sufficiently separated from the primary storage site to reduce susceptibility to the same threats.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	redshift-cluster-m aintenancesettings-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confident iality, integrity, and availability of backup information.		

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	The information system a. Conduct backups of user-level informati on contained in [Assignment: organization-defined system component s] [Assignment: organization-defined frequency consisten t with recovery time and recovery point objective s];b. Conduct backups of system-level information contained in the system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives];c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion [Assignment: organization-defined frequency consisten t with recovery time and recovery point	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
	objectives]; andd. Protect the confidentiality, integrity, and availability of backup information.		
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
CP-10	The organization provides for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/ O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ebs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	efs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	efs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system (daily incremental; weekly full).	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	(1) The information system implements multifactor authentication for network access to privileged accounts.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	(1) The information system implements multifactor authentication for network access to privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)	(1) The information system implements multifactor authentic ation for network access to privilege d accounts. (2) The information system implements multifact or authentication for network access to non- privileged accounts.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)	(1) The information system implements multifactor authentic ation for network access to privilege d accounts. (2) The information system implements multifact or authentication for network access to non- privileged accounts.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protectio n on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)(a)(d)(e)	The information system, for password-based authentication: a. Enforces minimum password complexit y of [Assignment: organization-defined requirements for case sensitivity, number of characters, mix of upper-case letters, lower-case letters, numbers, and special characters, including minimum requireme nts for each type]; d. Enforces password minimum and maximum lifetime restricti ons of [Assignme nt: organization-defined numbers for lifetime minimum, lifetime maximum]; e. Prohibits password reuse for 24 generations	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(4)	The organization employs automated tools to determine if password authentic ators are sufficien tly strong to satisfy [Assignment: organization-defined requirements].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA-5(7)	The organization ensures that unencrypted static authenticators are not embedded in applications or access scripts or stored on function keys.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availability of incident response-related information and support.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availabil ity of incident response-related information and support.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availabil ity of incident response-related information and support.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications [Assignment: organization-defined frequency and/or randomly in accordance with organization-defined process] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	vulnerability impact; c. Analyzes vulnerability scan reports and results from security control assessments; d. Remediates legitimate vulnerabilities [Assignment: organization-defined response times], in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e., systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications monthly [operating system/infrastructure; monthly web applications and databases] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring vulnerability impact; c. Analyzes vulnerability scan reports	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	and results from security control assessments; d. Remediates legitimate vulnerabilities: high-risk vulnerabilities mitigated within thirty (30) days from date of discovery; moderate-risk vulnerabilities mitigated within ninety (90) days from date of discovery; low risk vulnerabilities mitigated within one hundred and eighty (180) days from date of discovery , in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e.,		

Control ID	Control Description	AWS Config Rule	Guidance
	systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organizat ion requires the developer of the information system, system component , or information system service to: a. Perform configura tion managemen t during system, component, or service developme nt, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configura tion management]; c. Implement only organization-appro ved changes to the system, component , or service; d. Document approved changes to the system, component , or service and the potential security impacts of such changes; and e.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service development, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security impacts of such changes; and e.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organizat ion requires the developer of the information system, system component , or information system service to: a. Perform configura tion managemen t during system, component, or service developme nt, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configura tion management]; c. Implement only organization-appro ved changes to the system, component , or service; d. Document approved changes to the system, component , or service and the potential security impacts of such changes; and e.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service development, implementation, AND operation; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security impacts of such changes; and e.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, user name and password within AWS Codebuild project environments. Use OAuth instead of personal access tokens or a user name and password to grant authorization for accessing GitHub or Bitbucket repositories.
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28	The information system protects the confidentiality AND integrity of [Assignment: organization-defined information at rest].	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended information transfer via shared system resources.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
SC-4	The information system prevents unauthorized and unintended information transfer via shared system resources.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended information transfer via shared system resources.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-4	The information system prevents unauthorized and unintended information transfer via shared system resources.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer via shared system resources.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	sagemaker-notebook -no-direct-internet- access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(3)	The organization limits the number of external network connections to the information system.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
SC-7(3)	The organization limits the number of external network connections to the information system.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the confidentiality AND integrity of transmitted information.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system components with regard to flaw remediation.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system components with regard to flaw remediation.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system component s with regard to flaw remediation.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms at least monthly to determine the state of information system component s with regard to flaw remediation.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
SI-4(1)	The organizat ion connects and configures individua l intrusion detection tools into an information system-wide intrusion detection system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates information from monitoring tools employed throughout the information system.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic continuously for unusual or unauthorized activities or conditions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4(5)	The information system alerts [Assignment: organization-defined personnel or roles] when the following indications of compromise or potential compromise occur: [Assignment: organization- defined compromise indicators].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SI-7	The organization employs integrity verification tools to detect unauthorized changes to [Assignment: organization-defined software, firmware, and information].	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check security relevant events at least monthly.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5(1)	The organization employs vulnerability scanning tools that include the capability to readily update the information system vulnerabilities to be scanned. Supplemental Guidance: The vulnerabilities to be scanned need to be readily updated as new vulnerabilities are discovered, announced, and scanning methods developed. This updating process helps to ensure that potential vulnerabilities in the information system are identified and addressed as quickly as possible. Related controls: SI-3, SI-7.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	The organization: (a) Implements a managed interface for each external telecommunication service; (b) Establishes a traffic flow policy for each managed interface; (c) Protects the confidentiality and integrity of the information being transmitted across each interface; (d) Documents each exception to the traffic flow policy with a supporting mission/business need and duration of that need; and (e) Reviews exceptions to the traffic flow policy [Assignment: organization-defined frequency] and removes exceptions that are no longer supported by an explicit mission/business need. Supplemental Guidance: Related control: SC-8.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	The information system at managed interfaces denies network communications traffic by default and allows network communications traffic by exception(i.e., deny all, permit by exception). Supplemental Guidance: This control enhancement applies to both inbound and outbound network communications traffic. A deny-all, permit-by-exception network communications traffic policy ensures that only those connections which are essential and approved are allowed.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one IAM user. Placing IAM users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organization: (a) Establishes and administers privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignment: organization-defined actions] when privileged role assignments are no longer appropriate. Supplemental Guidance: Privileged roles are organization-defined roles assigned to individuals that allow those individuals to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(7)	The organizat ion: (a) Establish es and administe rs privileged user accounts in accordanc e with a role-based access scheme that organizes allowed information system access and privilege s into roles; (b) Monitors privileged role assignments; and (c) Takes [Assignme nt: organization-defined actions] when privileged role assignmen ts are no longer appropriate. Supp lemental Guidance: Privileged roles are organization-defin ed roles assigned to individuals that allow those individua ls to perform certain security-relevant functions that ordinary users are not authorized to perform. These privileged roles include, for example,	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
	key management, account managemen t, network and system administr ation, database administration, and web administration.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

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SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-11	The information system: a. Generates error messages that provide informati on necessary for corrective actions without revealing information that could be exploited by adversaries; and b. Reveals error messages only to [Assignment: organization-defin ed personnel or roles]. Supplemental Guidance: Organizat ions carefully consider the structure /content of error messages. The extent to which informati on systems are able to identify and handle error conditions is guided by organizational policy and operation al requirements. Information that could be exploited by adversaries includes, for example, erroneous logon	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
	attempts with passwords entered by mistake as the username, mission/business informati on that can be derived from(if not stated explicitl y by) informati on recorded, and personal informati on such as account numbers, social security numbers, and credit card numbers. In addition, error messages may provide a covert channel for transmitt ing information. Related controls: AU-2, AU-3, SC-31. C ontrol Enhancements: None. References: None.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	The organization: a. Employs malicious code protection mechanisms at information system entry and exit points to detect and eradicate malicious code; b. Updates malicious code protectio n mechanisms whenever new releases are available in accordance with organizat ional configuration management policy and procedures; c. Configures malicious code protection mechanisms to: 1. Perform periodic scans of the informati on system [Assignme nt: organization-defined frequency] and real-time scans of files from external sources at [Selection(one or more); endpoint; network entry/exit points] as the files	codebuild-project-envvar-awscred-check	Ensure authentic ation credentials AWS_ACCESS_KEY_ID and AWS_SECRE T_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintende d data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
	are downloaded, opened, or executed in accordance with organizational security policy; and 2. [Selectio n(one or more): block malicious code; quarantine malicious code; send alert to administr ator; [Assignment: organization-defined action]] in response to malicious code detection; and d. Addresses the receipt of false positives during malicious code detection and eradication and the resulting potential impact on the availability of the information system. Supplemental Guidance: Informati on system entry and exit points include, for example, firewalls, electroni c mail servers, web servers, proxy servers, remote-access servers, workstations,		

Control ID	Control Description	AWS Config Rule	Guidance
	notebook computers , and mobile devices. Malicious code includes, for example, viruses, worms, Trojan horses, and spyware. Malicious code can also be encoded in various formats(e .g., UUENCODE, Unicode), contained within compresse d or hidden files, or hidden in files using steganogr aphy. Malicious code can be transport ed by different means including, for example, web accesses, electroni c mail, electronic mail attachments, and portable storage devices. Malicious code insertions occur through the exploitat ion of information system vulnerabi lities. Malicious code protection mechanisms include, for example, anti-viru s signature definitio		

Control ID	Control Description	AWS Config Rule	Guidance
	ns and reputation-based technologies. A variety of technologies and methods exist to limit or eliminate the effects of malicious code. Pervasive configuration management and comprehensive software integrity controls may be effective in preventing execution of unauthorized code. In addition to commercial off-the-shelf software, malicious code may also be present in custom-built software. This could include, for example, logic bombs, back doors, and other types of cyber attacks that could affect organizational missions/business functions. Traditional malicious code protection mechanisms cannot always detect such code. In these		

Control ID	Control Description	AWS Config Rule	Guidance
	situations, organizat ions rely instead on other safeguard s including, for example, secure coding practices , configuration management and control, trusted procurement processes, and monitoring practices to help ensure that software does not perform functions other than the functions intended. Organizations may determine that in response to the detection of malicious code, different actions may be warranted. For example, organizat ions can define actions in response to malicious code detection during periodic scans, actions in response to detection of malicious downloads , and/or actions in response to detection		

Control ID	Control Description	AWS Config Rule	Guidance
	of maliciousness when attempting to open or execute files. Related controls: CM-3, MP-2, SA-4, SA-8, SA-12, SA-13, SC-7, SC-26, SC-44, SI-2, SI-4, SI-7. References: NIST Special Publication 800-83.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-3	The organization: a. Employs malicious code protection mechanisms at information system entry and exit points to detect and eradicate malicious code; b. Updates malicious code protectio n mechanisms whenever new releases are available in accordance with organizat ional configuration management policy and procedures; c. Configures malicious code protection mechanisms to: 1. Perform periodic scans of the informati on system [Assignme nt: organization-defined frequency] and real-time scans of files from external sources at [Selection(one or more); endpoint; network entry/exit points] as the files	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, user name and password within AWS Codebuild project environments. Use OAuth instead of personal access tokens or a user name and password to grant authoriza tion for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
	are downloaded, opened, or executed in accordance with organizational security policy; and 2. [Selectio n(one or more): block malicious code; quarantine malicious code; send alert to administr ator; [Assignment: organization-defined action]] in response to malicious code detection; and d. Addresses the receipt of false positives during malicious code detection and eradication and the resulting potential impact on the availability of the information system. Supplemental Guidance: Informati on system entry and exit points include, for example, firewalls, electroni c mail servers, web servers, proxy servers, remote-access servers, workstations,		

Control ID	Control Description	AWS Config Rule	Guidance
	notebook computers , and mobile devices. Malicious code includes, for example, viruses, worms, Trojan horses, and spyware. Malicious code can also be encoded in various formats(e .g., UUENCODE, Unicode), contained within compresse d or hidden files, or hidden in files using steganogr aphy. Malicious code can be transport ed by different means including, for example, web accesses, electroni c mail, electronic mail attachments, and portable storage devices. Malicious code insertions occur through the exploitat ion of information system vulnerabi lities. Malicious code protection mechanisms include, for example, anti-viru s signature definitio		

Control ID	Control Description	AWS Config Rule	Guidance
	ns and reputation-based technologies. A variety of technologies and methods exist to limit or eliminate the effects of malicious code. Pervasive configuration management and comprehensive software integrity controls may be effective in preventing execution of unauthorized code. In addition to commercial off-the-shelf software, malicious code may also be present in custom-built software. This could include, for example, logic bombs, back doors, and other types of cyber attacks that could affect organizational missions/business functions. Traditional malicious code protection mechanisms cannot always detect such code. In these		

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	situations, organizat ions rely instead on other safeguard s including, for example, secure coding practices , configuration management and control, trusted procurement processes, and monitoring practices to help ensure that software does not perform functions other than the functions intended. Organizations may determine that in response to the detection of malicious code, different actions may be warranted. For example, organizat ions can define actions in response to malicious code detection during periodic scans, actions in response to detection of malicious downloads , and/or actions in response to detection		

Control ID	Control Description	AWS Config Rule	Guidance
	of maliciousness when attempting to open or execute files. Related controls: CM-3, MP-2, SA-4, SA-8, SA-12, SA-13, SC-7, SC-26, SC-44, SI-2, SI-4, SI-7. References: NIST Special Publication 800-83.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives information system security alerts, advisories, and directives from [Assignment: organization-defined external organizations] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignment: organization-defined personnel or roles]; [Assignment: organization-defined elements within the organization]; [Assignment: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		

Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives informati on system security alerts, advisorie s, and directives from [Assignment: organization-defin ed external organizat ions] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignme nt: organization-defined personnel or roles]; [Assignme nt: organization-defined elements within the organizat ion]; [Assignme nt: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

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SI-5	The organization: a. Receives informati on system security alerts, advisorie s, and directives from [Assignment: organization-defin ed external organizat ions] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignme nt: organization-defined personnel or roles]; [Assignme nt: organization-defined elements within the organizat ion]; [Assignme nt: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

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Control ID	Control Description	AWS Config Rule	Guidance
SI-5	The organization: a. Receives information system security alerts, advisories, and directives from [Assignment: organization-defined external organizations] on an ongoing basis; b. Generates internal security alerts, advisories, and directives as deemed necessary; c. Disseminates security alerts, advisories, and directives to: [Selection(one or more): [Assignment: organization-defined personnel or roles]; [Assignment: organization-defined elements within the organization]; [Assignment: organization-defined external organizations]]; and d. Implements security directives in accordance with established time frames, or notifies	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	the issuing organizat ion of the degree of noncompliance. Su pplemental Guidance: The United States Computer Emergency Readiness Team(US-CERT) generates security alerts and advisories to maintain situational awareness across the federal governmen t. Security directive s are issued by OMB or other designated organizations with the responsibility and authority to issue such directive s. Compliance to security directives is essential due to the critical nature of many of these directives and the potential immediate adverse effects o n organizational operations and assets, individua ls, other organizat ions, and the Nation should the directives not be implemented		

Control ID	Control Description	AWS Config Rule	Guidance
	in a timely manner. External organizat ions include, for example, external mission/business partners, supply chain partners, external service providers, and other peer/supp orting organizations. Related control: SI-2. References: NIST Special Publication 800-40.		
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
AU-12(a)(c)	The informati on system: a. Provides audit record generation capability for the auditable events defined in AU-2 a. at all information system and network components where audit capability is deployed/available c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: Successful and unsuccessful account logon events, account management events, object access, policy change, privilege functions, process tracking, and system events. For Web applications: all administrator activity, authentication checks, authoriza tion checks, data deletions, data access, data changes, and permissio n changes. d. Determines that the following events are to be audited within the informati on system: [organiza tion-defined subset of the auditable events defined in AU-2 a to be audited continually for each identified event].	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Template

The template is available on GitHub: Operational Best Practices for FedRAMP (High Part 1).

Operational Best Practices for FedRAMP (High Part 2)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Federal Risk and Authorization Management Program (FedRAMP) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more FedRAMP controls. A FedRAMP control can be

related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC-02 (11)	The information system enforces organization-defined circumstances and/or usage conditions for organization-defined system accounts.	guardduty-enabled-centralized	Use Amazon GuardDuty to monitor the use of short term credentia ls associated with IAM instance roles. Amazon GuardDuty is able to check for credential exfiltrat ion in IAM Instance Profiles using UnauthorizedAccess check.
AC-02 (12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	cloudtrail-security-trail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to assigned personnel only when it is needed to complete the task for access for the security plan.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-06 (03)	The organization authorizes network access to [Assignment: organization-defined privileged commands] only for [Assignment: organization-defined compelling operational needs] and document the rationale for such access in the security plan for the system.	eks-endpoint-no-public-access	Manage access your to Amazon Elastic Kubernetes Service (Amazon EKS) cluster by ensuring that the Kubernetes API server endpoint is not publicly accessible. By restricting public access to the Kubernetes API server endpoint, you can reduce the risk of unauthorized access to your EKS cluster and its resources.

Control ID	Control Description	AWS Config Rule	Guidance
AU-05 (02)	The information system provides a warning to key personnel within the set time when allocated audit log storage volume reaches set percentage of repository maximum audit log storage capacity.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (04)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-06 (05)	The organization integrates analysis of audit records with analysis of vulnerability scanning information, performance data, and system monitoring information to further enhance the ability to identify inappropriate or unusual activity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (05)	The organization integrates analysis of audit records with analysis of [Selection (one or more): vulnerability scanning informati on; performan ce data; system monitoring informati on; [Assignment: organization-defin ed data/information collected from other sources]] to further enhance the ability to identify inappropriate or unusual activity.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-06 (07)	The organization specify permitted actions for each system process, role, and user associated with the review, analysis, and reporting of audit record information.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AU-06 (07)	The organization specify the permitted actions for each [Selection (one or more): system process; role; user] associated with the review, analysis, and reporting of audit record information.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AU-09 (02)	The information system implements cryptographic mechanisms to protect the integrity of audit information and audit tools.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
AU-09 (02)	The information system implements cryptographic mechanisms to protect the integrity of audit information and audit tools.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
AU-09 (02)	The information system implements cryptographic mechanisms to protect the integrity of audit information and audit tools.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
AU-09 (02)	The information system implements cryptographic mechanisms to protect the integrity of audit information and audit tools.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AU-09 (03)	The information system provides irrefutable evidence that an individual has performed.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
AU-09 (03)	The information system restricts network access to audit log data.	cloudtrail-s3-bucket-public-access-prohibited	Ensures that S3 buckets used to store CloudTrail logs are not publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	The information system provides irrefutable evidence that an individual (or process acting on behalf of an individual) has performed [Assignment: organization-defined actions to be covered by non-repudiation].	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AU-10	The information system provides irrefutable evidence that an individual (or process acting on behalf of an individual) has performed [Assignment: organization-defined actions to be covered by non-repudiation].	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	The information system provides irrefutable evidence that an individual (or process acting on behalf of an individual) has performed [Assignment: organization-defined actions to be covered by non-repudiation].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system component s] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defin ed level of tolerance for the relationship between time stamps of individual records in the audit trail].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system component s] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defin ed level of tolerance for the relationship between time stamps of individual records in the audit trail].	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system component s] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defin ed level of tolerance for the relationship between time stamps of individual records in the audit trail].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system components] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defined level of tolerance for the relationship between time stamps of individual records in the audit trail].	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system components] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defined level of tolerance for the relationship between time stamps of individual records in the audit trail].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system components] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defined level of tolerance for the relationship between time stamps of individual records in the audit trail].	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system components] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defined level of tolerance for the relationship between time stamps of individual records in the audit trail].	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system component s] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defin ed level of tolerance for the relationship between time stamps of individual records in the audit trail].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	The organization compiles audit records from [Assignment: organization-defined system component s] into a system-wide (logical or physical) audit trail that is time-correlated to within [Assignment: organization-defin ed level of tolerance for the relationship between time stamps of individual records in the audit trail].	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CM-03	The organization determines and documents the types of changes to the system that are configuration-cont rolled.	rds-instance-delet ion-protection-ena bled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-08 (02)	The organization maintains the currency, completeness, accuracy, and availability of the inventory of system components using [Assignment: organization-defined automated mechanisms].	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-08 (02)	The organization maintains the currency, completeness, accuracy, and availability of the inventory of system components using [Assignment: organization-defined automated mechanisms].	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-08 (02)	The organization maintains the currency, completeness, accuracy, and availability of the inventory of system components using [Assignment: organization-defined automated mechanisms].	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-02 (05)	The orgainiza tion provides for the plan for the continuance of mission and business functions with minimal or no loss of operational continuit y and sustains that continuity until full system restoration at primary processing and/or storage sites.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	backup-recovery-point-minimum-retention-check	Checks if a recovery point expires no earlier than after the specified period. Organizations establish recovery time and recovery point objectives as part of contingency planning. Configuration of the alternate storage site includes physical facilities and the systems supporting recovery operations that ensure accessibility and correct execution.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	rds-in-backup-plan	Checks if Amazon Relational Database Service (Amazon RDS) databases are present in AWS Backup plans. Organizations establish recovery time and recovery point objectives as part of contingency planning. Configura tion of the alternate storage site includes physical facilitie s and the systems supporting recovery operations that ensure accessibility and correct execution .

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	dynamodb-in-backup -plan	Checks whether Amazon DynamoDB table is present in AWS Backup Plans. Organizations establish recovery time and recovery point objectives as part of contingency planning. Configura tion of the alternate storage site includes physical facilitie s and the systems supporting recovery operations that ensure accessibility and correct execution .

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operations in accordance with recovery time and recovery point objectives.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-06 (02)	The organization configures the alternate storage site to facilitate recovery operation s in accordance with recovery time and recovery point objectives.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CP-07 (01)	The orgainization identifies an alternate processing site that is sufficiently separated from the primary processing site to reduce susceptibility to the same threats.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-07 (04)	The organizat ion prepares the alternate processin g site so that the site can serve as the operational site supporting essential mission and business functions.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-07 (04)	The organizat ion prepares the alternate processin g site so that the site can serve as the operational site supporting essential mission and business functions.	backup-recovery-po int-encrypted	Checks if a recovery point is encrypted . Site preparation includes establishing configuration settings for systems at the alternate processing site consistent with the requirements for such settings at the primary site and ensuring that essential supplies and logistical considera tions are in place.

Control ID	Control Description	AWS Config Rule	Guidance
CP-07 (04)	The organizat ion prepares the alternate processin g site so that the site can serve as the operational site supporting essential mission and business functions.	backup-recovery-po int-manual-deletion-disabled	Checks if a backup vault has an attached resource-based policy which prevents deletion of recovery points. Site preparati on includes establish ing configuration settings for systems at the alternate processing site consistent with the requirements for such settings at the primary site and ensuring that essential supplies and logistical considera tions are in place.

Control ID	Control Description	AWS Config Rule	Guidance
CP-07 (04)	The organization prepares the alternate processing site so that the site can serve as the operational site supporting essential mission and business functions.	s3-bucket-cross-region-replication-enabled	Checks if you have enabled S3 Cross-Region Replication for your Amazon S3 buckets. Site preparation includes establishing configuration settings for systems at the alternate processing site consistent with the requirements for such settings at the primary site and ensuring that essential supplies and logistical considerations are in place.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	backup-recovery-point-minimum-retention-check	Checks if a recovery point expires no earlier than after the specified period. Separate storage for critical information applies to all critical information regardless of the type of backup storage media. Critical system software includes operating systems, middleware, cryptographic key management systems, and intrusion detection systems. Security-related information includes inventories of system hardware, software, and firmware components. Alternate storage sites, including geographically distributed architectures, serve as separate storage facilities for organizations. Organizations may provide separate storage

Control ID	Control Description	AWS Config Rule	Guidance
			by implementing automated backup processes at alternative storage sites (e.g., data centers). The General Services Administration (GSA) establishes standards and specifications for security and fire rated containers.
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	s3-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Simple Storage Service (Amazon S3) buckets are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (03)	The organization store backup copies of [Assignment: organization-defined critical system software and other security-related information] in a separate facility or in a fire rated container that is not collocated with the operational system.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-09 (05)	The organization transfers system backup information to the alternate storage site [Assignment: organization-defined time period and transfer rate consistent with the recovery time and recovery point objectives].	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (05)	The organization transfers system backup information to the alternate storage site [Assignment: organization-defined time period and transfer rate consistent with the recovery time and recovery point objectives].	backup-recovery-point-minimum-retention-check	Checks if a recovery point expires no earlier than after the specified period.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (05)	The organization transfers system backup information to the alternate storage site [Assignment: organization-defined time period and transfer rate consistent with the recovery time and recovery point objectives].	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (05)	The organization transfers system backup information to the alternate storage site [Assignment: organization-defined time period and transfer rate consistent with the recovery time and recovery point objectives].	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (05)	The organizat ion transfers system backup information to the alternate storage site [Assignment: organization-defin ed time period and transfer rate consistent with the recovery time and recovery point objectives].	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-09 (08)	The organization employs cryptographic mechanisms to prevent unauthorized disclosure backup information.	backup-recovery-point-encrypted	The selection of cryptographic mechanisms is based on the need to protect the confidentiality and integrity of backup information. The strength of mechanisms selected is commensurate with the security category or classification of the information. Cryptographic protection applies to system backup information in storage at both primary and alternate locations. Organizations that implement cryptographic mechanisms to protect information at rest also consider cryptographic key management solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10 (04)	The organization provides the capability to restore system components within [Assignment: organization-defined restoration time periods] from configuration-controlled and integrity-protected information representing a known, operational state for the components.	backup-recovery-point-encrypted	Enable this rule to check if a recovery point is encrypted.
CP-10 (04)	The organization provides the capability to restore system components within [Assignment: organization-defined restoration time periods] from configuration-controlled and integrity-protected information representing a known, operational state for the components.	backup-recovery-point-minimum-retention-check	Enable this rule to chek that if a recovery point expires no ealier than after the specified period.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10 (04)	The organization provides the capability to restore system components within [Assignment: organization-defined restoration time periods] from configuration-controlled and integrity-protected information representing a known, operational state for the components.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
CP-10 (04)	The organization provides the capability to restore system components within [Assignment: organization-defined restoration time periods] from configuration-controlled and integrity-protected information representing a known, operational state for the components.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10 (04)	The organizat ion provides the capability to restore system component s within [Assignme nt: organization-defined restoration time periods] from configuration-cont rolled and integrity-protected informati on representing a known, operation al state for the components.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
IA-02 (02)	Implement multi-fac tor authentication for access to non-privi leged accounts.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-02 (02)	Implement multi-factor authentication for access to non-privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-02 (06)	The information system Implements multi-factor authentication for [Selection (one or more): local; network; remote] access to [Selection (one or more): privileged accounts; non-privileged accounts] such that: (a) One of the factors is provided by a device separate from the system gaining access; and (b) The device meets [Assignment: organization-defined strength of mechanism requirements].	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-02 (06)	The information system Implements multi-factor authentication for [Selection (one or more): local; network; remote] access to [Selection (one or more): privileged accounts; non-privileged accounts] such that: (a) One of the factors is provided by a device separate from the system gaining access; and (b) The device meets [Assignment: organization-defined strength of mechanism requirements].	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-02 (08)	The information system implements replay-resistant authentication mechanisms for access to [Selection (one or more): privileged accounts; non-privileged accounts].	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
IA-05 (08)	The information system implements [Assignment: organization-defined security controls] to manage the risk of compromise due to individuals having accounts on multiple systems.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring IAM users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
IR-04 (04)	The organization employs automated mechanisms to correlate incident information and individual incident responses to achieve an organization-wide perspective on incident awareness and response.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
IR-04 (04)	The organization employs automated mechanisms to correlate incident information and individual incident responses to achieve an organization-wide perspective on incident awareness and response.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
IR-04 (04)	The organization employs automated mechanisms to correlate incident information and individual incident responses to achieve an organization-wide perspective on incident awareness and response.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
IR-04 (04)	The organization employs automated mechanisms to correlate incident information and individual incident responses to achieve an organization-wide perspective on incident awareness and response.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-04 (04)	The organization employs automated mechanisms to correlate incident information and individual incident responses to achieve an organization-wide perspective on incident awareness and response.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
RA-05	Monitor and scan for vulnerabilities hosted applications and when new vulnerabi lities potentially affect the system are identified and reported	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
RA-05	Define the breadth and depth of vulnerability scanning coverage.	inspector-lambda-standard-scan-enabled	Checks if Amazon Inspector V2 Lambda standard scanning is activated for your single or multi-account environment to detect potential software vulnerabilities. The rule is NON_COMPLIANT if Lambda standard scanning is not activated.
RA-05	Define the breadth and depth of vulnerability scanning coverage.	inspector-ec2-scan-enabled	Checks if Amazon Inspector V2 EC2 scanning is activated for your single or multi-account environment to detect potential vulnerabilities and network reachability issues on your EC2 instances. The rule is NON_COMPLIANT if EC2 scanning is not activated.

Control ID	Control Description	AWS Config Rule	Guidance
RA-05	Define the breadth and depth of vulnerability scanning coverage.	inspector-ecr-scan-enabled	Checks if Amazon Inspector V2 ECR scanning is activated for your single or multi-account environment to detect potential software vulnerabilities in your container images. The rule is NON_COMPLIANT if ECR scanning is not activated.
RA-05 (03)	Define the breadth and depth of vulnerability scanning coverage.	inspector-lambda-standard-scan-enabled	Checks if Amazon Inspector V2 Lambda standard scanning is activated for your single or multi-account environment to detect potential software vulnerabilities. The rule is NON_COMPLIANT if Lambda standard scanning is not activated.

Control ID	Control Description	AWS Config Rule	Guidance
RA-05 (03)	Define the breadth and depth of vulnerability scanning coverage.	inspector-ec2-scan-enabled	Checks if Amazon Inspector V2 EC2 scanning is activated for your single or multi-account environment to detect potential vulnerabilities and network reachability issues on your EC2 instances. The rule is NON_COMPLIANT if EC2 scanning is not activated.
RA-05 (03)	Define the breadth and depth of vulnerability scanning coverage.	inspector-ecr-scan-enabled	Checks if Amazon Inspector V2 ECR scanning is activated for your single or multi-account environment to detect potential software vulnerabi lities in your container images. The rule is NON_COMPL IANT if ECR scanning is not activated.

Control ID	Control Description	AWS Config Rule	Guidance
RA-05 (05)	Implement privileged access authorization to [Assignment: organization-defined system components] for scannig of organization. (Specifies all components that support authentication and all scans)	inspector-ec2-scan-enabled	Checks if Amazon Inspector V2 EC2 scanning is activated for your single or multi-account environment to detect potential vulnerabilities and network reachability issues on your EC2 instances. The rule is NON_COMPLIANT if EC2 scanning is not activated.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The orgainization requires the developer of the system, system component, or system service to: a. Perform configuration management during system, component, or service [Selection (one or more): design; development; implementation; operation; disposal]; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security and	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	privacy impacts of such changes; and e. Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		
SC-07 (12)	The orgainization implements [Assignment: organization-defined host-based boundary protection mechanisms] at [Assignment: organization-defined system components].	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-07 (20)	Provide the capability to dynamically isolate [Assignment: organization-defined system components] from other system components.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-07 (21)	Employ boundary protection mechanisms to isolate [Assignment: organization-defined system component s] supporting [Assignment: organization-defin ed missions and/or business functions].	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-07(21)	Employ boundary protection mechanisms to isolate [Assignment: organization-defined system components] supporting [Assignment: organization-defined missions and/or business functions].	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12 (01)	Establish and manage cryptographic keys when cryptography is employed within the system in accordance with the following key management requirements: [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SC-28 (01)	The organization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-28 (01)	The orgainization implements cryptographic mechanisms to prevent unauthorized disclosure and modification of the following information at rest on [Assignment: organization-defined system components or media]: [Assignment: organization-defined information].	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (12)	Alert [Assignment: organization-defined personnel or roles] using [Assignment: organization-defined automated mechanisms] when the following indications of inappropriate or unusual activities with security or privacy implications occur: [Assignment: organization-defined activities that trigger alerts].	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additiona l monitoring of privileged users: [Assignment: organization-defined additional monitorin g].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additiona l monitoring of privileged users: [Assignment: organization-defined additional monitorin g].	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additional monitoring of privileged users: [Assignment: organization-defined additional monitoring].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (20)	Implement the following additiona l monitoring of privileged users: [Assignment: organization-defined additional monitorin g].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (22)	(a) Detect network services that have not been authorized or approved by [Assignment: organization-defined authorization or approval processes]; and (b) [Selection (one or more): Audit; Alert [Assignment: organization-defined personnel or roles]] when detected.	securityhub-enabled	(A) AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-04 (22)	(a) Detect network services that have not been authorized or approved by [Assignment: organization-defined authorization or approval processes]; and (b) [Selection (one or more): Audit; Alert [Assignment: organization-defined personnel or roles]] when detected.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
SI-04 (22)	(a) Detect network services that have not been authorized or approved by [Assignment: organization-defined authorization or approval processes]; and (b) [Selection (one or more): Audit; Alert [Assignment: organization-defined personnel or roles]] when detected.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-05 (01)	Broadcast security alert and advisory information throughout the organization using [Assignment: organization-defined automated mechanisms].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-05 (01)	Broadcast security alert and advisory information throughout the organization using [Assignment: organization-defined automated mechanisms].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-07 (02)	Employ automated tools that provide notification to [Assignment: organization-defined personnel or roles] upon discovering discrepancies during integrity verification.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-07 (02)	Employ automated tools that provide notification to [Assignment: organization-defined personnel or roles] upon discovering discrepancies during integrity verification.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-07 (05)	Automatically [Selection (one or more): shut the system down; restart the system; implement [Assignment: organization-defined controls]] when integrity violations are discovered.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-07 (05)	Automatically [Selection (one or more): shut the system down; restart the system; implement [Assignment: organization-defined controls]] when integrity violations are discovered.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-07 (15)	Implement cryptographic mechanisms to authenticate the following software or firmware components prior to installation: [Assignment: organization-defined software or firmware components].	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SI-07 (15)	Implement cryptographic mechanisms to authenticate the following software or firmware components prior to installation: [Assignment: organization-defined software or firmware components].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for FedRAMP (High Part 2).

Operational Best Practices for FFIEC

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Federal Financial Institutions Examination Council (FFIEC) Cyber Security Assessment Tool domains and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more FFIEC Cyber Security Assessment Tool controls. A FFIEC Cyber Security Assessment Tool control can be related to

multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
D1.G.IT.B.1	An inventory of organizational assets (for example, hardware, software, data, and systems hosted externally) is maintained.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
D1.G.IT.B.1	An inventory of organizational assets (for example, hardware, software, data, and systems hosted externally) is maintained.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon

Control ID	Control Description	AWS Config Rule	Guidance
			EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
D1.G.IT.B.1	An inventory of organizational assets (for example, hardware, software, data, and systems hosted externally) is maintained.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
D1.G.IT.B.1	An inventory of organizational assets (for example, hardware, software, data, and systems hosted externally) is maintained.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.Rm.B.1	An information security and business continuity risk management function(s) exists within the institution.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
D1.RM.RA.B.2	The risk assessment identifies Internet-based systems and high-risk transactions that warrant additional authentication controls.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D1.RM.RA.B.2	The risk assessment identifies Internet-based systems and high-risk transactions that warrant additional authentication controls.	annual-risk-assessment-performed (process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.
D1.TC.Tr.B.2	Annual information security training includes incident response, current cyber threats (for example,phishing, spear phishing, social engineering, and mobile security), and emerging issues.	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
D2.IS.Is.B.1	Information security threats are gathered and shared with applicable internal employees.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
D2.IS.Is.B.1	Information security threats are gathered and shared with applicable internal employees.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D2.IS.Is.B.1	Information security threats are gathered and shared with applicable internal employees.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
D2.MA.Ma.B.1	Audit log records and other security event logs are reviewed and retained in a secure manner.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D2.MA.Ma.B.2	Computer event logs are used for investigations after an event has occurred.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.1	The institution belongs or subscribes to a threat and vulnerability information-sharing source(s) that provides information on threats (for example, FS-ISAC, US- CERT).	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.1	The institution belongs or subscribes to a threat and vulnerability information-sharing source(s) that provides information on threats (for example, FS-ISAC, US- CERT).	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
D2.TI.Ti.B.2	Threat information is used to monitor threats and vulnerabilities.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.2	Threat information is used to monitor threats and vulnerabi lities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.2	Threat information is used to monitor threats and vulnerabilities.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.3	Threat informati on is used to enhance internal risk management and controls.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D2.TI.Ti.B.3	Threat informati on is used to enhance internal risk management and controls.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
D3.CC.PM.B.1	A patch managemen t program is implemented and ensures that software and firmware patches are applied in a timely manner.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
D3.CC.PM.B.1	A patch management program is implemented and ensures that software and firmware patches are applied in a timely manner.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
D3.CC.PM.B.1	A patch management program is implemented and ensures that software and firmware patches are applied in a timely manner.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
D3.CC.PM.B.1	A patch management program is implemented and ensures that software and firmware patches are applied in a timely manner.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.CC.PM.B.3	Patch management reports are reviewed and reflect missing security patches.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
D3.CC.PM.B.3	Patch management reports are reviewed and reflect missing security patches.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
D3.CC.PM.B.3	Patch management reports are reviewed and reflect missing security patches.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
D3.CC.PM.B.3	Patch management reports are reviewed and reflect missing security patches.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.1	The institution is able to detect anomalous activities through monitoring across the environment.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.1	The institution is able to detect anomalous activities through monitoring across the environment.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.1	The institution is able to detect anomalous activities through monitoring across the environment.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
D3.DC.An.B.2	Customer transacti ons generating anomalous activity alerts are monitored and reviewed.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.2	Customer transactions generating anomalous activity alerts are monitored and reviewed.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.3	Logs of physical and/or logical access are reviewed following events.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
D3.DC.An.B.4	Access to critical systems by third parties is monitored for unauthorized or unusual activity	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.An.B.5	Elevated privileges are monitored.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
D3.DC.An.B.5	Elevated privileges are monitored.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
D3.DC.Ev.B.1	A normal network activity baseline is established.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
D3.DC.Ev.B.1	A normal network activity baseline is established.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
D3.DC.Ev.B.1	A normal network activity baseline is established.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.1	A normal network activity baseline is established.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D3.DC.Ev.B.2	Mechanisms (for example, antivirus alerts, log event alerts) are in place to alert management to potential attacks.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.3	Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
D3.DC.Ev.B.3	Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.3	Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Ev.B.3	Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
D3.DC.Th.B.1	Independent testing (including penetration testing and vulnerability scanning) is conducted according to the risk assessment for external-facing systems and the internal network.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Th.B.1	Independent testing (including penetration testing and vulnerabi lity scanning) is conducted according to the risk assessmen t for external-facing systems and the internal network.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D3.DC.Th.B.1	Independent testing (including penetration testing and vulnerability scanning) is conducted according to the risk assessment for external-facing systems and the internal network.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.1	Employee access is granted to systems and confidential data based on job responsibilities and the principles of least privilege.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.10	Production and non-production environments are segregated to prevent unauthorized access or changes to information assets. (*N/A if no productio n environment exists at the institution or the institution's third-party.)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.10	Production and non-production environments are segregated to prevent unauthorized access or changes to information assets. (*N/A if no productio n environment exists at the institution or the institution's third-party.)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.10	Production and non-production environments are segregated to prevent unauthorized access or changes to information assets. (*N/A if no productio n environment exists at the institution or the institution's third-party.)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.10	Production and non-production environments are segregated to prevent unauthorized access or changes to information assets. (*N/A if no productio n environment exists at the institution or the institution’s third-party.)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.12	All passwords are encrypted in storage and in transit.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.13	Confidential data is encrypted when transmitted across public or untrusted networks (for example, Internet).	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
D3.PC.Am.B.15	Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.16	Administrative, physical, or technical controls are in place to prevent users without administrative responsibilities from installing unauthorized software.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.16	Administrative, physical, or technical controls are in place to prevent users without administrative responsibilities from installing unauthorized software.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.
D3.PC.Am.B.16	Administrative, physical, or technical controls are in place to prevent users without administrative responsibilities from installing unauthorized software.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.16	Administrative, physical, or technical controls are in place to prevent users without administrative responsibilities from installing unauthorized software.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
D3.PC.Am.B.2	Employee access to systems and confidential data provides for separation of duties.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.2	Employee access to systems and confidential data provides for separation of duties.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
D3.PC.Am.B.2	Employee access to systems and confidential data provides for separation of duties.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls).	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls)	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
D3.PC.Am.B.3	Elevated privileges (for example, administrator privileges) are limited and tightly controlled (for example, assigned to individuals, not shared, and require stronger password controls)	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applicati ons, and hardware.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applicati ons, and hardware.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
D3.PC.Am.B.6	Identification and authentication are required and managed for access to systems, applications, and hardware.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.7	Access controls include password complexity and limits to password attempts and reuse.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Am.B.8	All default passwords and unnecessary default accounts are changed before system implement ation.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
D3.PC.Im.B.1	Network perimeter defense tools (for example, border router and firewall) are used.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
D3.PC.IM.B.2	Systems that are accessed from the Internet or by external parties are protected by firewalls or other similar devices.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.3	All ports are monitored.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
D3.PC.IM.B.3	All ports are monitored.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.3	All ports are monitored.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
D3.PC.IM.B.3	All ports are monitored.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.3	All ports are monitored.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.3	All ports are monitored.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.5	Systems configurations (for servers, desktops, routers, etc.) follow industry standards and are enforced	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.5	Systems configurations (for servers, desktops, routers, etc.) follow industry standards and are enforced	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.5	Systems configurations (for servers, desktops, routers, etc.) follow industry standards and are enforced	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.6	Ports, functions , protocols and services are prohibite d if no longer needed for business purposes.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.6	Ports, functions , protocols and services are prohibited if no longer needed for business purposes.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.6	Ports, functions , protocols and services are prohibite d if no longer needed for business purposes.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.IM.B.6	Ports, functions , protocols and services are prohibite d if no longer needed for business purposes.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Im.B.7	Access to make changes to systems configurations (including virtual machines and hypervisors) is controlled and monitored.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
D3.PC.Se.B.1	Developers working for the institution follow secure program coding practices, as part of a system development life cycle (SDLC), that meet industry standards.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
D3.PC.Se.B.1	Developers working for the instituti on follow secure program coding practices, as part of a system developme nt life cycle (SDLC), that meet industry standards.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
D4.C.Co.B.2	The institution ensures that third-party connections are authorized.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
D4.C.Co.B.2	The institution ensures that third-party connections are authorized.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
D4.C.Co.B.2	The institution ensures that third-party connections are authorized.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
D4.C.Co.B.2	The institution ensures that third-party connections are authorized.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.1	Alert parameters are set for detecting information security incidents that prompt mitigating actions.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.1	Alert parameters are set for detecting information security incidents that prompt mitigating actions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.1	Alert parameters are set for detecting information security incidents that prompt mitigating actions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
D5.DR.De.B.2	System performan ce reports contain information that can be used as a risk indicator to detect information security incidents	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.2	System performance reports contain information that can be used as a risk indicator to detect information security incidents	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
D5.DR.De.B.3	Tools and processes are in place to detect, alert, and trigger the incident response program.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
D5.ER.Es.B.4	Incidents are classified, logged and tracked.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
D5.IR.Pl.B.1	The institution has documented how it will react and respond to cyber incidents.	response-plan-exists-maintained (process check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	lambda-concurrency-check	This rule ensures that a Lambda function' s concurrency high and low limits are established. This can assist in baselinin g the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
D5.IR.Pl.B.6	The institution plans to use business continuity, disaster recovery, and data backup programs to recover operations following an incident.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Template

The template is available on GitHub: Operational Best Practices for FFIEC.

Operational Best Practices for Germany Cloud Computing Compliance Criteria Catalog (C5)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Germany Cloud Computing Compliance Criteria Catalog (C5) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more Germany C5 controls. A Germany C5 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
COS-01	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
COS-01	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
COS-01	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.

Control ID	AWS Config Rule	Guidance
COS-01	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
COS-01	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
COS-01	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
COS-03	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
COS-03	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
COS-03	ebs-snapshot-public-restora ble-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
COS-03	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
COS-03	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
COS-03	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
COS-03	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
COS-03	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
COS-03	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
COS-03	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
COS-03	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
COS-03	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
COS-03	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
COS-03	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
COS-03	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
COS-03	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
COS-03	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
COS-03	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
COS-03	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
COS-03	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
COS-03	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configure d to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
COS-05	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
COS-05	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
COS-05	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
COS-05	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
COS-05	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
COS-05	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
COS-05	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
COS-05	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
COS-05	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
COS-05	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
COS-05	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
COS-05	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
COS-05	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
CRY-02	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CRY-02	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
CRY-02	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies
CRY-02	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
CRY-02	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CRY-02	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
CRY-02	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-02	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
CRY-02	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CRY-03	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-03	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CRY-03	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
CRY-03	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
CRY-03	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-03	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
CRY-03	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
CRY-03	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-03	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CRY-03	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CRY-03	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
CRY-03	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CRY-03	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-03	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
CRY-03	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
CRY-03	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CRY-03	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
CRY-03	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CRY-03	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
CRY-03	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
CRY-04	cmk-backing-key-rotation-en abled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
DEV-07	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
DEV-07	codebuild-project-logging-e nabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	AWS Config Rule	Guidance
DEV-07	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
DEV-07	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
DEV-07	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DEV-07	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
IDM-01	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.

Control ID	AWS Config Rule	Guidance
IDM-01	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
IDM-01	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
IDM-01	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
IDM-01	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
IDM-01	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
IDM-01	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
IDM-01	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
IDM-01	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
IDM-01	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IDM-01	secretsmanager-rotation-ena bled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.
IDM-01	secretsmanager-scheduled-ro tation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potential ly reduce the business impact if it is compromised.

Control ID	AWS Config Rule	Guidance
IDM-01	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.
IDM-01	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
IDM-01	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
IDM-01	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
IDM-01	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	AWS Config Rule	Guidance
IDM-01	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
IDM-01	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.
IDM-01	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	AWS Config Rule	Guidance
IDM-01	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
IDM-01	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	AWS Config Rule	Guidance
IDM-01	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Managemen t (IAM) authentication is enabled on Amazon Relationa l Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.
IDM-01	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	AWS Config Rule	Guidance
IDM-03	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
IDM-03	secretsmanager-secret-unuse d	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organizat ion's policies.

Control ID	AWS Config Rule	Guidance
IDM-08	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
CRY-01	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
IDM-09	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
IDM-09	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
IDM-09	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IDM-09	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
OPS-01	clb-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availabil ity zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
OPS-01	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availabil ity zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
OPS-01	lambda-vpc-multi-az-check	If your AWS Lambda function is configured to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availabil ity Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.

Control ID	AWS Config Rule	Guidance
OPS-01	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
OPS-01	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
OPS-01	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
OPS-01	elb-cross-zone-load-balanci ng-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zon e load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your applicati on's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
OPS-01	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
OPS-02	clb-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availabil ity zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	AWS Config Rule	Guidance
OPS-02	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
OPS-02	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	AWS Config Rule	Guidance
OPS-02	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availabil ity zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
OPS-02	lambda-vpc-multi-az-check	If your AWS Lambda function is configured to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availabil ity Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.

Control ID	AWS Config Rule	Guidance
OPS-02	rds-cluster-multi-az-enabled	Amazon Relational Database Service (Amazon RDS) clusters should have Multi-AZ replication enabled to assist in the availability of the data that is stored. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
OPS-02	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
OPS-02	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
OPS-02	elb-cross-zone-load-balanci ng-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zon e load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your applicati on's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
OPS-02	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
OPS-07	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
OPS-07	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.
OPS-07	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	AWS Config Rule	Guidance
OPS-07	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
OPS-07	opensearch-data-node-fault-tolerance	Amazon OpenSearch Service (OpenSearch Service) requires at least three data nodes for high availability and fault-tolerance. Deploying an OpenSearch Service domain with at least three data nodes ensures cluster operations if a node fails.

Control ID	AWS Config Rule	Guidance
OPS-07	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.
OPS-07	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
OPS-07	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
OPS-07	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
OPS-07	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
OPS-07	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
OPS-07	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
OPS-07	fsx-resources-protected-by-backup-plan	To help with data backup processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
OPS-07	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
OPS-07	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
OPS-12	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
OPS-12	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
OPS-13	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
OPS-13	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
OPS-13	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
OPS-14	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
OPS-14	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
OPS-14	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
OPS-14	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
OPS-15	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
OPS-15	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
OPS-15	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.
OPS-15	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
OPS-15	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
OPS-15	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
OPS-15	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
OPS-15	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
OPS-15	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
OPS-15	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
OPS-15	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
OPS-15	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
OPS-15	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
OPS-15	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
OPS-15	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
OPS-15	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
OPS-22	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	AWS Config Rule	Guidance
PSS-05	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
PSS-05	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
PSS-05	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
PSS-05	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
PSS-07	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.

Template

The template is available on GitHub: Germany Cloud Computing Compliance Criteria Catalog (C5).

Operational Best Practices for Gramm Leach Bliley Act (GLBA)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Gramm-Leach-Bliley Act (GLBA) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more GLBA controls. A GLBA control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative,	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	technical, and physical safeguards		
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	sagemaker-notebook -no-direct-internet- access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	autoscaling-launch -config-public-ip- disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	api-gw-cache-enabl ed-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	cloudwatch-log-gro up-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	rds-storage-encryp ted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	s3-bucket-server-s ide-encryption-ena bled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	sagemaker-endpoint -configuration-kms- key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	sagemaker-notebook -instance-kms-key- configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	dynamodb-table-enc rypted-kms	Ensure that encryptio n is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	opensearch-node-to -node-encryption-c heck	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(1)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguard s (1) to insure the security and confidentiality of customer records and information;	kinesis-stream-enc rypted	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(2)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (2) to protect against any anticipated threats or hazards to the security or integrity of such records; and	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(2)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (2) to protect against any anticipated threats or hazards to the security or integrity of such records; and	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	secretsmanager-rot ation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	s3-bucket-policy-g rantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_gran tee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principal s, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropriate standards for the financial institutions subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or information which could result in substantial harm or inconvenience to any customer.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-writ e permissions.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	efs-access-point-e nforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirect ory.

Control ID	Control Description	AWS Config Rule	Guidance
GLBA-SEC.501(b)(3)	In furtherance of the policy in subsection (a), each agency or authority described in section 505(a) shall establish appropria te standards for the financial instituti ons subject to their jurisdiction relating to administrative, technical, and physical safeguards (3) to protect against unauthorized access to or use of such records or informati on which could result in substantial harm or inconvenience to any customer.	efs-access-point-e nforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configure d on the access point for all file system operations and only grants access to this enforced user identity.

Template

The template is available on GitHub: Operational Best Practices for Gramm Leach Bliley Act (GLBA).

Operational Best Practices for GxP EU Annex 11

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the GxP EU Annex 11 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more GxP EU Annex 11 controls. A GxP EU Annex 11 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1. Risk Management	Risk management should be applied throughout the lifecycle of the computerised system taking into account patient safety, data integrity and product quality. As part of a risk managemen t system, decisions on the extent of validation and data integrity controls should be based on a justified and documented risk assessment of the computerised system.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
1. Risk Management	Risk management should be applied throughout the lifecycle of the computerised system taking into account patient safety, data integrity and product quality. As part of a risk managemen	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts,

Control ID	Control Description	AWS Config Rule	Guidance
	t system, decisions on the extent of validation and data integrity controls should be based on a justified and documented risk assessment of the computerised system.		or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
4.2. Validation - Documentation Change Control	Validation documentation should include change control records (if applicabl e) and reports on any deviations observed during the validation process.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangements, data flows and interfaces with other systems or processes, any hardware and software pre-requisites, and security measures should be available.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangements, data flows and interfaces with other systems or processes, any hardware and software pre-requisites, and security measures should be available.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangements, data flows and interfaces with other systems or processes, any hardware and software pre-requisites, and security measures should be available.	ec2-security-group-attached-to-eni-periodic	To help manage your asset inventory, this rule checks if security groups are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or to an elastic network interface. If your security groups are not attached to these resource types, they may be unused and no longer needed.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangements, data flows and interfaces with other systems or processes, any hardware and software pre-requisites, and security measures should be available.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangeme nts, data flows and interfaces with other systems or processes , any hardware and software pre-requi sites, and security measures should be available.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.3. Validation - Inventory	An up to date listing of all relevant systems and their GMP functionality (inventory) should be available. For critical systems an up to date system description detailing the physical and logical arrangements, data flows and interfaces with other systems or processes, any hardware and software pre-requisites, and security measures should be available.	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
4.8. Validation - Data Transfer	If data are transferred to another data format or system, validation should include checks that data are not altered in value and/or meaning during this migration process.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchangin g data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchangin g data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchangin g data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchangin g data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchangin g data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
5. Data	Computerised systems exchanging data electronically with other systems should include appropriate built-in checks for the correct and secure entry and processing of data, in order to minimize the risks.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.1. Data Storage - Damage Protection	Data should be secured by both physical and electronic means against damage. Stored data should be checked for accessibility, readability and accuracy. Access to data should be ensured throughout the retention period.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodica lly.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
7.2. Data Storage - Backups	Regular back-ups of all relevant data should be done. Integrity and accuracy of backup data and the ability to restore the data should be checked during validation and monitored periodically.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
9. Audit Trails	Consideration should be given, based on a risk assessmen t, to building into the system the creation of a record of all GMP-relev ant changes and deletions (a system generated "audit trail"). For change or deletion of GMP-relev ant data the reason should be documente d. Audit trails need to be available and convertible to a generally intelligible form and regularly reviewed.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
10. Change and Configuration Management	Any changes to a computerised system including system configurations should only be made in a controlled manner in accordance with a defined procedure.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
10. Change and Configuration Management	Any changes to a computerised system including system configurations should only be made in a controlled manner in accordance with a defined procedure.	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
10. Change and Configuration Management	Any changes to a computerised system including system configurations should only be made in a controlled manner in accordance with a defined procedure.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
11. Periodic Evaluation	Computerised systems should be periodically evaluated to confirm that they remain in a valid state and are compliant with GMP. Such evaluations should include, where appropriate, the current range of functionality, deviation records, incidents, problems, upgrade history, performance, reliability, security and validation status reports.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
12.1. Security - Authorized Persons	Physical and/or logical controls should be in place to restrict access to computerised system to authorised persons. Suitable methods of preventing unauthorised entry to the system may include the use of keys, pass cards, personal codes with passwords, biometrics, restricted access to computer equipment and data storage areas.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
12.3. Security - Authorization Audit Trail	Creation, change, and cancellation of access authorisations should be recorded.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirmin g or deleting data including date and time.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirmin g or deleting data including date and time.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirmin g or deleting data including date and time.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirmin g or deleting data including date and time.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirming or deleting data including date and time.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
12.4. Security - Audit Trail	Management systems for data and for documents should be designed to record the identity of operators entering, changing, confirmin g or deleting data including date and time.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
13. Incident Management	All incidents, not only system failures and data errors, should be reported and assessed. The root cause of a critical incident should be identified and should form the basis of corrective and preventive actions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
13. Incident Management	All incidents, not only system failures and data errors, should be reported and assessed. The root cause of a critical incident should be identified and should form the basis of corrective and preventive actions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	backup-recovery-po int-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	backup-recovery-po int-minimum-retent ion-check	To help with data back-up processes , ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. This rule allows you to set the requiredRetentionD ays (config default: 35) parameter. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/ O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	ebs-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, container s, and IP addresses , in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	lambda-vpc-multi-az-check	If your AWS Lambda function is configure d to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availability Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	opensearch-data-no de-fault-tolerance	Amazon OpenSearc h Service (OpenSear ch Service) requires at least three data nodes for high availability and fault-tolerance. Deploying an OpenSearch Service domain with at least three data nodes ensures cluster operations if a node fails.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	rds-instance-delet ion-protection-ena bled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	rds-cluster-multi-az-enabled	Amazon Relationa l Database Service (Amazon RDS) clusters should have Multi-AZ replicati on enabled to assist in the availability of the data that is stored. Each Availabil ity Zone runs on its own physically distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

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16. Business Continuity	For the availability of computerised systems supportin g critical processes , provisions should be made to ensure continuity of support for those processes in the event of a system breakdown (for example a manual or alternative system). The time required to bring the alternati ve arrangements into use should be based on risk and appropriate for a particular system and the business process it supports. These arrangements should be adequatel y documented and tested.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

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17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
17. Archiving	Data may be archived. This data should be checked for accessibility, readability and integrity. If relevant changes are to be made to the system (for example computer equipment or programs), then the ability to retrieve the data should be ensured and tested.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Template

The template is available on GitHub: Operational Best Practices for GxP EU Annex 11.

Operational Best Practices for HIPAA Security

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Health Insurance Portability and Accountability Act (HIPAA) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more HIPAA controls. A HIPAA control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This Conformance Pack was validated by AWS Security Assurance Services LLC (AWS SAS), which is a team of Payment Card Industry Qualified Security Assessors (QSAs), HITRUST Certified Common Security Framework Practitioners (CCSFPs), and compliance professionals certified to provide guidance and assessments for various industry frameworks. AWS SAS professionals designed this Conformance Pack to enable a customer to align to a subset of the HIPAA.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(A)	(A) Risk analysis (Required). Conduct an accurate and thorough assessment of the potential risks and vulnerabilities to the confidentiality, integrity, and availability of electronic protected health information	annual-risk-assessment-performed (Process Check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.

Control ID	Control Description	AWS Config Rule	Guidance
	held by the covered entity.		
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk managemen t (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(1)(ii)(B)	(B) Risk management (Required). Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with Section 164.306(a).	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-writ e permissions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	codebuild-project-envvar-awscred-che ck	Ensure authentic ation credentials AWS_ACCESS_KEY_ID and AWS_SECRE T_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintende d data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(i)	(3)(i) Standard: Workforce security. Implement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health informati on, as provided under paragraph (a)(4) of this section, and to prevent those workforce members who do not have access under paragraph (a)(4) of this section from obtaining access to electronic protected health information.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(A)	(A) Authorization and/or supervision (Addressable). Implement procedures for the authorization and/or supervision of workforce members who work with electronic protected health information or in locations where it might be accessed.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedure s to determine that the access of a workforce member to electronic protected health information is appropriate.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(B)	(B) Workforce clearance procedure (Addressable). Implement procedures to determine that the access of a workforce member to electronic protected health information is appropriate.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(3)(ii)(C)	(C) Termination procedures (Addressable). Implement procedures for terminating access to electronic protected health information when the employment of a workforce member ends or as required by determinations made as specified in paragraph (a)(3)(ii)(B) of this section.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicable requirements of subpart E of this part.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-writ e permissions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(i)	(4)(i) Standard: Information access management. Implement policies and procedures for authorizing access to electronic protected health information that are consistent with the applicabl e requirements of subpart E of this part.	s3-bucket-acl-proh ibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(A)	(A) Isolating health care clearinghouse functions (Required). If a health care clearinghouse is part of a larger organization, the clearinghouse must implement policies and procedures that protect the electronic protected health information of the clearinghouse from unauthorized access by the larger organization.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authoriza tion (Addressable). Implement policies and procedures for granting access to electronic protected health informati on, for example, through access to a workstation, transacti on, program, process, or other mechanism.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authoriza tion (Addressable). Implement policies and procedures for granting access to electronic protected health informati on, for example, through access to a workstation, transacti on, program, process, or other mechanism.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authoriza tion (Addressable). Implement policies and procedures for granting access to electronic protected health informati on, for example, through access to a workstation, transacti on, program, process, or other mechanism.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(B)	(B) Access authorization (Addressable). Implement policies and procedures for granting access to electronic protected health information, for example, through access to a workstation, transaction, program, process, or other mechanism.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(4)(ii)(C)	(C) Access establishment and modification (Addressable). Implement policies and procedures that, based upon the entity's access authorization policies, establish, document, review, and modify a user's right of access to a workstation, transaction, program, or process.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(A)	(A) Security reminders (Addressable). Periodic security updates.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
164.308(a)(5)(ii)(A)	(A) Security reminders (Addressable). Periodic security updates.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(A)	(A) Security reminders (Addressable). Periodic security updates.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(A)	(A) Security reminders (Addressable). Periodic security updates.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(B)	(B) Protection from malicious software (Addressable). Procedures for guarding against, detecting, and reporting malicious software.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(B)	(B) Protection from malicious software (Addressable). Procedures for guarding against, detecting, and reporting malicious software.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(B)	(B) Protection from malicious software (Addressable). Procedures for guarding against, detecting, and reporting malicious software.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
164.308(a)(5)(ii)(C)	(C) Log-in monitoring (Addressable). Procedures for monitoring log-in attempts and reporting discrepancies.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(C)	(C) Log-in monitoring (Addressable). Procedures for monitoring log-in attempts and reporting discrepancies.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
164.308(a)(5)(ii)(C)	(C) Log-in monitoring (Addressable). Procedures for monitoring log-in attempts and reporting discrepancies.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(5)(ii)(D)	(D) Password management (Addressable). Procedures for creating, changing, and safeguarding passwords.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(6)(i)	(6)(i) Standard: Security incident procedures. Implement policies and procedures to address security incidents.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(6)(ii)	(ii) Implementation specification: Response and Reporting (Required). Identify and respond to suspected or known security incidents; mitigate, to the extent practicable, harmful effects of security incidents that are known to the covered entity; and document security incidents and their outcomes.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrence (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electronic protected health information.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrence (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electronic protected health information.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrence (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electronic protected health information.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(i)	(7)(i) Standard: Contingency plan. Establish (and implement as needed) policies and procedures for responding to an emergency or other occurrenc e (for example, fire, vandalism, system failure, and natural disaster) that damages systems that contain electroni c protected health information.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electroni c protected health information.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electroni c protected health information.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electroni c protected health information.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(A)	(A) Data backup plan (Required). Establish and implement procedures to create and maintain retrievable exact copies of electronic protected health information.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(B)	(B) Disaster recovery plan (Required). Establish (and implement as needed) procedures to restore any loss of data.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuat ion of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuat ion of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuat ion of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuat ion of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuation of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(7)(ii)(C)	(C) Emergency mode operation plan (Required). Establish (and implement as needed) procedures to enable continuat ion of critical business processes for protection of the security of electronic protected health information while operating in emergency mode.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(8)	(8) Standard: Evaluation. Perform a periodic technical and nontechnical evaluation, based initially upon the standards implemented under this rule and subsequently, in response to environmental or operational changes affecting the security of electronic protected health information, that establishes the extent to which an entity's security policies and procedures meet the requirements of this subpart.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
164.308(a)(8)	(8) Standard: Evaluation. Perform a periodic technical and nontechnical evaluation, based initially upon the standards implemented under this rule and subsequently, in response to environmental or operational changes affecting the security of electronic protected health information, that establishes the extent to which an entity's security policies and procedures meet the requirements of this subpart.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	codebuild-project-envvar-awscred-check	Ensure authentic ation credentials AWS_ACCESS_KEY_ID and AWS_SECRE T_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintende d data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	autoscaling-launch -config-public-ip- disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic information systems that maintain electronic protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in 164.308(a)(4).	s3-bucket-acl-proh ibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(1)	(a)(1) Standard: Access control. Implement technical policies and procedures for electronic informati on systems that maintain electroni c protected health information to allow access only to those persons or software programs that have been granted access rights as specified in ¤ 164.308(a)(4).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(i)	(2) Implementation specifications: (i) Unique user identification (Required). Assign a unique name and/or number for identifying and tracking user identity.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedure s for obtaining necessary electroni c protected health information during an emergency.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.
164.312(a)(2)(ii)	(ii) Emergency access procedure (Required). Establish (and implement as needed) procedures for obtaining necessary electronic protected health information during an emergency.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(a)(2)(iv)	(iv) Encryption and decryption (Addressable). Implement a mechanism to encrypt and decrypt electronic protected health information.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedura l mechanisms that record and examine activity in informati on systems that contain or use electronic protected health information.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.
164.312(b)	(b) Standard: Audit controls. Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(1)	(c)(1) Standard: Integrity. Implement policies and procedures to protect electronic protected health informati on from improper alteration or destructi on.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
164.312(c)(1)	(c)(1) Standard: Integrity. Implement policies and procedures to protect electronic protected health informati on from improper alteration or destructi on.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(1)	(c)(1) Standard: Integrity. Implement policies and procedures to protect electronic protected health informati on from improper alteration or destructi on.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
164.312(c)(1)	(c)(1) Standard: Integrity. Implement policies and procedures to protect electronic protected health informati on from improper alteration or destructi on.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(1)	(c)(1) Standard: Integrity. Implement policies and procedures to protect electronic protected health informati on from improper alteration or destructi on.	opensearch-node-to -node-encryption-c heck	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(2)	(2) Implementation specification: Mechanism to authenticate electronic protected health information (Addressable). Implement electronic mechanisms to corroborate that electronic protected health information has not been altered or destroyed in an unauthorized manner.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(2)	(2) Implementation specification: Mechanism to authenticate electronic protected health information (Addressable). Implement electronic mechanisms to corroborate that electronic protected health information has not been altered or destroyed in an unauthorized manner.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
164.312(c)(2)	(2) Implementation specification: Mechanism to authenticate electronic protected health information (Addressable). Implement electronic mechanisms to corroborate that electronic protected health information has not been altered or destroyed in an unauthorized manner.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(2)	(2) Implementation specification: Mechanism to authenticate electronic protected health information (Addressable). Implement electronic mechanisms to corroborate that electronic protected health information has not been altered or destroyed in an unauthorized manner.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(c)(2)	(2) Implementation specification: Mechanism to authenticate electronic protected health information (Addressable). Implement electronic mechanisms to corroborate that electronic protected health information has not been altered or destroyed in an unauthorized manner.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(d)	(d) Standard: Person or entity authentic ation. Implement procedures to verify that a person or entity seeking access to electroni c protected health information is the one claimed.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
164.312(d)	(d) Standard: Person or entity authentic ation. Implement procedures to verify that a person or entity seeking access to electroni c protected health information is the one claimed.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(d)	(d) Standard: Person or entity authentic ation. Implement procedures to verify that a person or entity seeking access to electroni c protected health information is the one claimed.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Managemen t (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentia ls. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(d)	(d) Standard: Person or entity authentic ation. Implement procedures to verify that a person or entity seeking access to electroni c protected health information is the one claimed.	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(d)	(d) Standard: Person or entity authentic ation. Implement procedures to verify that a person or entity seeking access to electroni c protected health information is the one claimed.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentia ls. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electroni c protected health information that is being transmitted over an electroni c communications network.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electroni c protected health information that is being transmitted over an electroni c communications network.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electroni c protected health information that is being transmitted over an electroni c communications network.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(1)	(e)(1) Standard: Transmission security. Implement technical security measures to guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(i)	(i) Integrity controls (Addressable). Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electroni c protected health information whenever deemed appropriate.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electroni c protected health information whenever deemed appropriate.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electroni c protected health information whenever deemed appropriate.	sagemaker-endpoint -configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electroni c protected health information whenever deemed appropriate.	sagemaker-notebook -instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
164.312(e)(2)(ii)	(ii) Encryption (Addressable). Implement a mechanism to encrypt electronic protected health information whenever deemed appropriate.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	cloud-trail-encryp tion-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryptio n is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	opensearch-encrypt ed-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(1)	(b)(1) Standard: Requirements for group health plans. Except when the only electronic protected health informati on disclosed to a plan sponsor is disclosed pursuant to ¤ 164.504(f)(1)(ii) or (iii), or as authorized under ¤ 164.508, a group health plan must ensure that its plan documents provide that the plan sponsor will reasonably and appropriately safeguard electroni c protected health information created, received, maintained, or transmitted to or by the plan sponsor on behalf of the group health plan.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan; (ii) Ensure that the adequate separation required by ¤ 164.504(f)(2)(iii) is supported by reasonable and appropriate security measures; (iii) Ensure that any agent, including a	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	subcontractor, to whom it provides this information agrees to implement reasonabl e and appropriate security measures to protect the informati on; and (iv) Report to the group health plan any security incident of which it becomes aware.		

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	rds-cluster-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
164.314(b)(2)(i)	(2) Implementation specifications (Required). The plan documents of the group health plan must be amended to incorporate provisions to require the plan sponsor to — (i) Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the group health plan;	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Template

The template is available on GitHub: Operational Best Practices for HIPAA Security.

Operational Best Practices for IRS 1075

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the IRS 1075 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more IRS 1075 controls. An IRS 1075 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive

Control ID	Control Description	AWS Config Rule	Guidance
			data can exist, enable encryption in transit to help protect that data.
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing d. Data Encryption in Transit	FTI must be encrypted in transit within the cloud environment. All mechanisms used to encrypt FTI must be FIPS 140 certified and operate utilizing the latest FIPS 140 compliant module(s). This requirement must be included in the SLA.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryptio n mechanism. This requirement must be included in the SLA.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryptio n mechanism. This requirement must be included in the SLA.	s3-bucket-server-s ide-encryption-ena bled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryption mechanism. This requirement must be included in the SLA.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryptio n mechanism. This requirement must be included in the SLA.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
3.3.1 Cloud Computing e. Data Encryption at Rest	Data Encryption at Rest: FTI must be encrypted while at rest in the cloud using the latest FIPS 140 certified encryptio n mechanism. This requirement must be included in the SLA.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing k. Multifactor Authentication	Agencies must implement sufficient multifactor authentication when their cloud solutions are available from the internet (i.e., there is access to the cloud solution from outside of the agency's trusted network).	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing k. Multifactor Authentication	Agencies must implement sufficient multifactor authentication when their cloud solutions are available from the internet (i.e., there is access to the cloud solution from outside of the agency's trusted network).	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing k. Multifactor Authentication	Agencies must implement sufficient multifactor authentication when their cloud solutions are available from the internet (i.e., there is access to the cloud solution from outside of the agency's trusted network).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1 Cloud Computing k. Multifactor Authentication	Agencies must implement sufficient multifactor authentication when their cloud solutions are available from the internet (i.e., there is access to the cloud solution from outside of the agency's trusted network).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
3.3.1 Cloud Computing i. Risk Assessment:	The agency must conduct an annual assessment of the security and privacy controls in place on all information systems used for receiving, processing, storing, accessing, protecting and/or transmitting FTI.	annual-risk-assessment-performed(Process Check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no condition s could result in unintended behavior.
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collectio n of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.6 Network Boundary and Infrastructure	Agencies must implement boundary protection devices throughout their system architecture, including routers, firewalls, switches, and intrusion detection systems to protect FTI and FTI systems.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (f)	Create, enable, modify, disable and remove accounts in accordance with agency account management procedures prerequisites;	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (f)	Create, enable, modify, disable and remove accounts in accordance with agency account management procedures prerequisites;	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
AC-2 Account Management (f)	Create, enable, modify, disable and remove accounts in accordance with agency account management procedures prerequisites;	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (f)	Create, enable, modify, disable and remove accounts in accordance with agency account management procedures prerequisites;	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
AC-2 Account Management (f)	Create, enable, modify, disable and remove accounts in accordance with agency account management procedures prerequisites;	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2 Account Management (g)	Monitor the use of accounts	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2 Account Management (g)	Monitor the use of accounts	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (g)	Monitor the use of accounts	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	secretsmanager-secret-periodic-rotation	This rule ensures AWS Secrets Manager secrets have periodic rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised. The default value is 90 days.
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2 Account Management (j)	Review accounts for compliance with account management requirements	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
(CE-1) Automated System Account Management	Support the management of system accounts using automated mechanisms.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
(CE-1) Automated System Account Management	Support the management of system accounts using automated mechanisms.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
(CE-1) Automated System Account Management	Support the management of system accounts using automated mechanisms.	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
(CE-3): Disable Accounts	Disable accounts within 120 days when the accounts: a. Have expired; b. Are no longer associated to a user or individual; c. Are in violation of organizational policy; or d. Have been inactive for 120 days for non-privileged accounts and 60 days for privileged accounts	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
(CE-12) Account Monitoring for Atypical Usage	Monitor system accounts for agency-defined atypical usage; and Report atypical usage of system accounts to agency-defined personnel or roles.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container’s underlying hardware.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	ecs-containers-non privileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitio ns should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-write permissions.
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC-6 Least Privilege	Employ the principle of least privilege , allowing only authorized accesses for users (or processes acting on behalf of users) that are necessary to accomplish assigned organizational tasks.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
AC-17: Remote Access	Establish and document usage restrictions, configura tion/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17: Remote Access	Establish and document usage restrictions, configuration/connection requirements and implementation guidance for each type of remote access allowed; and Authorize each type of remote access to the system prior to allowing such connections.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
AT-1: Awareness and Training	Provide security and privacy literacy training to system users (including managers, senior executives, and contractors)	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2: Audit Events	Identify the types of events that the system is capable of logging in support of the audit function	audit-log-policy-exists(Process Check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.
AU-16: Cross-Organizational Auditing Logging	Employ agency-defined methods for coordinating agency-defined audit information among external organizations when audit information is transmitted across organizational boundaries.	audit-log-policy-exists(Process Check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7: Continuous Monitoring	Develop a system-level continuous monitoring strategy and implement continuous monitoring in accordance with the organization-level continuous monitoring strategy: Establish agency-defined metrics to be monitored; Ongoing control assessments in accordance with the continuous monitoring strategy; Ongoing monitoring of system and organization-defined metrics in accordance with the continuous monitoring strategy; Correlation and analysis of information generated by control assessments and monitoring; Response actions to address results of the analysis of control assessment and monitoring information; and Reporting the security and privacy	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	status of the system to agency-defined personnel annually, at a minimum.		
CP-9: System Backup	a. Conduct backups of user-level information contained in system documentation, including securityrelated documentation, weekly; b. Conduct backups of system-level information contained in the system weekly; c. Conduct backups of system documentation, including security- and privacy-related documentation weekly; and d. Protect the confidentiality, integrity, and availability of backup information.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-level information contained in system documentation, including securityrelated documentation, weekly; b. Conduct backups of system-level information contained in the system weekly; c. Conduct backups of system documentation, including security- and privacy-related documentation weekly; and d. Protect the confidentiality, integrity, and availability of backup information.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	backup-recovery-po int-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	backup-recovery-po int-minimum-retent ion-check	To help with data back-up processes , ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. This rule allows you to set the requiredRetentionD ays (config default: 35) parameter. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-level information contained in system documentation, including securityrelated documentation, weekly; b. Conduct backups of system-level information contained in the system weekly; c. Conduct backups of system documentation, including security- and privacy-related documentation weekly; and d. Protect the confidentiality, integrity, and availability of backup information.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	rds-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9: System Backup	a. Conduct backups of user-leve l information contained in system documentation, including securityr elated documenta tion, weekly; b. Conduct backups of system-le vel information contained in the system weekly; c. Conduct backups of system documenta tion, including security- and privacy-related documenta tion weekly; and d. Protect the confident iality, integrity, and availability of backup information.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2: Identification and Authentication (Organizational Users) (CE-1) Multifactor Authentication to Privileged Accounts	Implement multi-factor authentication for access to privileged accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2: Identification and Authentication (Organizational Users) (CE-1) Multifactor Authentication to Privileged Accounts	Implement multi-factor authentication for access to privileged accounts	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2: Identification and Authentication (Organizational Users) (CE-2) Multifactor Authentication to Non-Privileged Accounts	Implement multi-factor authentication for access to non-privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5: Authenticator Management: (CE-1) Password-Based Authentication: For password-based authentication	Enforce the following composition and complexity rules: 1. Enforce minimum password length of fourteen (14) characters. 2. Enforce minimum password complexity to contain a combination of numbers, uppercase letters, lowercase letters, and special characters. 3. Enforce at least one (1) character change when new passwords are selected for use. 4. Store and transmit only cryptogra phically protected passwords. 5. Enforce password lifetime restrictions: i. One (1) day minimum and 90 days maximum. ii. Service accounts passwords shall expire within 366 days (inclusive).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PM-5: System Inventory	Develop and update continually an inventory of organizational systems.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PM-5: System Inventory	Develop and update continually an inventory of organizational systems.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
PM-5: System Inventory	Develop and update continually an inventory of organizational systems.	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PM-5: System Inventory	Develop and update continually an inventory of organizational systems.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.
RA-5: Vulnerability Monitoring and Scanning	Monitor and scan for vulnerabilities in the system and hosted applications every thirty (30) days, prior to placing a new information system on the agency network, to confirm remediation actions, and when new vulnerabilities potentially affecting the system are identified and reported	vuln-scans-performed(Process Check)	Ensure vulnerability scans are performed according to your compliance requirements. The cadence of scanning, tools used, and use of results should be defined by your organization.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10: Developer Configuration Management (e.)	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10: Developer Configuration Management (e.)	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10: Developer Configuration Management (e.)	Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10: Developer Configuration Management (a) (c.)	Perform configuration management during system, component, or service design, development, implementation, operation; Implement only organization-approved changes to the system, component, or service;	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4: Information in Shared System Resources	Prevent unauthorized and unintended information transfer from shared system resources	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system component s that are separated from internal organizational networks; and Connect to external networks or informati on systems only through managed interfaces consistin g of boundary protection devices arranged in accordance with an organizational security architecture.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system component s that are separated from internal organizational networks; and Connect to external networks or informati on systems only through managed interfaces consistin g of boundary protection devices arranged in accordance with an organizational security architecture.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system component s that are separated from internal organizational networks; and Connect to external networks or informati on systems only through managed interfaces consistin g of boundary protection devices arranged in accordance with an organizational security architecture.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system component s that are separated from internal organizational networks; and Connect to external networks or informati on systems only through managed interfaces consistin g of boundary protection devices arranged in accordance with an organizational security architecture.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system components that are separated from internal organizational networks; and Connect to external networks or information systems only through managed interfaces consisting of boundary protection devices arranged in accordance with an organizational security architecture.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection	Monitor and control communications at the external boundary of the system and at key internal boundaries within the system; Implement subnetworks for publicly accessible system component s that are separated from internal organizational networks; and Connect to external networks or informati on systems only through managed interfaces consistin g of boundary protection devices arranged in accordance with an organizational security architecture.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection (CE-9) Restrict Threatening Outgoing Communications Traffic	Detect and deny outgoing communications traffic posing a threat to external systems; and Audit the identity of internal users associated with denied communications.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection (CE-9) Restrict Threatening Outgoing Communications Traffic	Detect and deny outgoing communications traffic posing a threat to external systems; and Audit the identity of internal users associated with denied communications.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
SC-7: Boundary Protection (CE-9) Restrict Threatening Outgoing Communications Traffic	Detect and deny outgoing communications traffic posing a threat to external systems; and Audit the identity of internal users associated with denied communications.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
SC-7: Boundary Protection (IRS-Defined)	Agencies shall implement and manage boundary protection (typically using firewalls) at trust boundaries. Each trust boundary shall be monitored and communications across each boundary shall be controlled.	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.
SC-7: Boundary Protection (IRS-Defined)	Agencies shall implement and manage boundary protection (typically using firewalls) at trust boundaries. Each trust boundary shall be monitored and communications across each boundary shall be controlled.	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8: Transmission Confidentiality and Integrity (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure of information and detect changes to information during transmission.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-12: Cryptographic Key Establishment and Management	The agency must establish and manage cryptographic keys when cryptography is employed within the system in accordance with the following key management requirements: NIST SP 800-57, Recommendation for Key Management, for key generation, distribution, storage, access, and destruction.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12: Cryptographic Key Establishment and Management	The agency must establish and manage cryptographic keys when cryptography is employed within the system in accordance with the following key management requirements: NIST SP 800-57, Recommendation for Key Management, for key generation, distribution, storage, access, and destruction.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptography required for each specified cryptographic use: Latest FIPS-140 validated encryption mechanism, NIST 800-52, Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryption). Use of SHA-1 for digital signatures is prohibited.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13: Cryptographic Protection	Implement the following types of cryptogra phy required for each specified cryptographic use: Latest FIPS-140 validated encryptio n mechanism, NIST 800-52, Guideline s for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations, Encryption in transit (payload encryptio n). Use of SHA-1 for digital signatures is prohibited.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23: Session Authenticity	Protect the authenticity of communications sessions.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-28: Protection of Information at Rest (CE-1) Cryptographic Protection	Implement cryptographic mechanisms to prevent unauthorized disclosure and modification of FTI at rest on end user computing systems (i.e., desktop computers, laptop computers, mobile devices, portable and removable storage devices) in non-volatile storage.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediation (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediation (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediation (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediati on (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediation (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2: Flaw Remediation (IRS-Defined)	The agency shall ensure that, upon daily power up and connection to the agency's network, workstations (as defined in policy and including remote connections using GFE workstations) are checked to ensure that the most recent agency-approved patches have been applied and that any absent or new patches are applied as necessary or otherwise checked not less than after every 24 hours (excluding weekends, holidays, etc.)	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring	The organization: a. Monitors the information system to detect: 1.Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2.Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization-defined techniques and methods]; c.Deploys monitoring devices: 1. Strategically within the information system to collect organization-determined essential information; and 2. At ad hoc locations within the system to track specific types of transactions of interest to the organization;	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	d.Protects information obtained from intrusion-monitoring tools from unauthorized access, modification, and deletion;		

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring	The organization: a. Monitors the information system to detect: 1.Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2.Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization-defined techniques and methods]; c.Deploys monitoring devices: 1. Strategically within the information system to collect organization-determined essential information; and 2. At ad hoc locations within the system to track specific types of transactions of interest to the organization;	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	d.Protects information obtained from intrusion-monitoring tools from unauthorized access, modification, and deletion;		

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring	The organization: a. Monitors the information system to detect: 1.Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2.Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization-defined techniques and methods]; c.Deploys monitoring devices: 1. Strategically within the information system to collect organization-determined essential information; and 2. At ad hoc locations within the system to track specific types of transactions of interest to the organization;	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	d.Protects information obtained from intrusion-monitoring tools from unauthorized access, modification, and deletion;		

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring	The organization: a. Monitors the information system to detect: 1.Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2.Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization-defined techniques and methods]; c.Deploys monitoring devices: 1. Strategically within the information system to collect organization-determined essential information; and 2. At ad hoc locations within the system to track specific types of transactions of interest to the organization;	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
	d.Protects information obtained from intrusion-monitoring tools from unauthorized access, modification, and deletion;		

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring	The organization: a. Monitors the information system to detect: 1.Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2.Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization-defined techniques and methods]; c.Deploys monitoring devices: 1. Strategically within the information system to collect organization-determined essential information; and 2. At ad hoc locations within the system to track specific types of transactions of interest to the organization;	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
	d.Protects information obtained from intrusion-monitoring tools from unauthorized access, modification, and deletion;		
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4: System Monitoring (IRS-Defined)	All Internet Access Points/portals shall capture and retain, for at least one year, inbound and outbound traffic header information, with the exclusion of approved Internet "anonymous" connections, as may be approved by the agency CISO.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7: Software, Firmware and Information Integrity	Employ integrity verification tools to detect unauthorized changes to the following software, firmware, and information: system kernels, drivers, firmware (for example, BIOS, UEFI), software (for example, OS, applications, middleware) and security attributes.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7: Software, Firmware and Information Integrity	Employ integrity verification tools to detect unauthorized changes to the following software, firmware, and information: system kernels, drivers, firmware (for example, BIOS, UEFI), software (for example, OS, applications, middleware) and security attributes.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7: Software, Firmware and Information Integrity	Employ integrity verification tools to detect unauthorized changes to the following software, firmware, and information: system kernels, drivers, firmware (for example, BIOS, UEFI), software (for example, OS, applications, middleware) and security attributes.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	dynamodb-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	ebs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	efs-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	rds-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
SI-12: Information Management and Retention	Manage and retain information within the system and information output from the system in accordance with applicable laws, executive orders, directives, regulations, policies, standards, guidelines, and operational requirements.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Template

The template is available on GitHub: Operational Best Practices for IRS 1075.

Operational Best Practices for K-ISMS

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between Korea – Information Security Management System (ISMS) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more Korea – ISMS controls. A Korea – ISMS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
1.2.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
1.2.1	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon

Control ID	AWS Config Rule	Guidance
		Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
2.1.3	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
2.1.3	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.
2.3.3	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
2.3.3	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
2.5.1	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.

Control ID	AWS Config Rule	Guidance
2.5.1	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
2.5.1	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
2.5.1	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
2.5.1	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
2.5.1	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
2.5.1	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
2.5.1	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
2.5.1	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
2.5.1	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
2.5.1	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
2.5.1	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
2.5.1	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
2.5.1	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
2.5.3	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
2.5.3	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
2.5.3	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
2.5.4	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
2.5.5	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
2.5.5	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
2.5.5	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
2.6	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
2.6	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
2.6	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
2.6	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
2.6	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
2.6	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
2.6	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
2.6	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
2.6	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
2.6	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
2.6	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
2.6	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
2.6	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organization's policies.
2.6	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
2.6	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
2.6	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
2.6	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
2.6	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
2.6	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
2.6	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
2.6.6	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
2.6.6	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
2.6.6	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
2.6.6	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
2.6.6	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
2.6.6	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
2.6.6	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
2.6.6	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
2.6.6	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
2.6.6	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
2.6.6	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
2.6.6	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
2.6.7	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
2.7	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
2.7	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configure d to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
2.7	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
2.7	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
2.7	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
2.7	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
2.7	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	AWS Config Rule	Guidance
2.7	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2.7	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
2.7	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
2.7	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
2.7	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
2.7	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
2.7	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
2.7	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
2.7	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
2.7	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
2.7	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
2.7	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
2.7	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
2.7	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
2.7	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
2.7	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
2.7	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
2.7	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
2.7.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
2.7.1	elb-predefined-security-policy-ssl-check	To help protect data in transit, ensure that your Classic Elastic Load Balancing SSL listeners are using a predefined security policy. Elastic Load Balancing provides predefined SSL negotiation configurations that are used for SSL negotiation when a connection is established between a client and your load balancer. The SSL negotiation configurations provide compatibility with a broad range of clients and use high-strength cryptographic algorithms. This rule requires that you set a predefined security policy for your SSL listeners. The default security policy is: ELBSecurityPolicy-TLS-1-2-2017-0. The actual value should reflect your organization's policies
2.7.2	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
2.7.2	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
2.8.5	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	AWS Config Rule	Guidance
2.8.5	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.
2.8.6	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	AWS Config Rule	Guidance
2.8.6	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.
2.9.1	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
2.9.1	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	AWS Config Rule	Guidance
2.9.1	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
2.9.1	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
2.9.2	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
2.9.2	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	AWS Config Rule	Guidance
2.9.2	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughpu t capacity is checked on your Amazon DynamoDB tables. This is the amount of read/ write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approache s the maximum limit for a customer's account. This rule allows you to optionall y set accountRCUThreshol dPercentage (Config Default: 80) and accountWCUThreshol dPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.
2.9.2	ec2-instance-detailed-monit oring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	AWS Config Rule	Guidance
2.9.2	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
2.9.2	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
2.9.3	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
2.9.3	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
2.9.3	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
2.9.3	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.9.3	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
2.9.3	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
2.9.3	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
2.9.3	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
2.9.3	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
2.9.3	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.9.3	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.
2.9.3	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
2.9.3	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
2.9.3	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
2.9.3	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	AWS Config Rule	Guidance
2.9.3	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.
2.9.3	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.9.4	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
2.9.4	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
2.9.4	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
2.9.4	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
2.9.4	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
2.9.4	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
2.9.4	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
2.9.4	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
2.9.4	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
2.9.4	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
2.9.4	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
2.10.3	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.

Control ID	AWS Config Rule	Guidance
2.10.3	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
2.10.3	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
2.10.3	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
2.10.3	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
2.10.5	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
2.10.5	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
2.10.5	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
2.10.5	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
2.10.5	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
2.10.5	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/ SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
2.10.5	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
2.10.5	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
2.10.8	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
2.10.8	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
2.11.2	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	AWS Config Rule	Guidance
2.11.3	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.
2.11.3	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	AWS Config Rule	Guidance
2.11.3	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
2.11.3	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	AWS Config Rule	Guidance
2.11.3	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	AWS Config Rule	Guidance
2.11.3	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
2.12	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
2.12	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
2.12	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.12	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
2.12	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.12	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
2.12	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
2.12	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
2.12	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
2.12	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.12	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
2.12	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
2.12	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
2.12	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
2.12	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
2.12	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implement ed to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-Site VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	AWS Config Rule	Guidance
2.12	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.12	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Template

The template is available on GitHub: Operational Best Practices for K-ISMS.

Operational Best Practices for Load Balancing

This conformance pack contains AWS Config rules based on load balancing within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Load Balancing.

Operational Best Practices for Logging

This conformance pack contains AWS Config rules based on logging within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Logging.

Operational Best Practices for Management and Governance Services

This conformance pack contains AWS Config rules based on Management and Governance Services. For more information, see Management and Governance on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Management and Governance Services.

Operational Best Practices for MAS Notice 655

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Monetary Authority of Singapore (MAS) Notice 655 – Cyber Hygiene and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more MAS Notice 655 – Cyber Hygiene controls. A MAS Notice 655 – Cyber Hygiene control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
4.1	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.
4.1	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.
4.1	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by

Control ID	AWS Config Rule	Guidance
		checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
4.1	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
4.1	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
4.1	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	AWS Config Rule	Guidance
4.1	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
4.1	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
4.1	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
4.1	root-account-hardware-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
4.1	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
4.1	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
4.1	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
4.1	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
4.1	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
4.1	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
4.1	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.
4.1	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
4.1	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
4.1	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
4.2	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
4.2	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
4.2	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
4.2	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
4.2	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
4.2	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
4.2	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
4.2	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	AWS Config Rule	Guidance
4.3	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
4.3	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
4.3	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
4.3	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	AWS Config Rule	Guidance
4.4	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.
4.4	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
4.4	ebs-snapshot-public-restora ble-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
4.4	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
4.4	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	AWS Config Rule	Guidance
4.4	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
4.4	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
4.4	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
4.4	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
4.4	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
4.4	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
4.4	lambda-function-public-acce ss-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
4.4	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
4.4	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
4.4	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
4.4	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.
4.4	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
4.4	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	AWS Config Rule	Guidance
4.4	netfw-policy-default-action-fragment-packets	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows. Defaulting to a Pass action may allow unintended traffic.
4.4	netfw-policy-default-action-full-packets	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows. Defaulting to a Pass action may allow unintended traffic.
4.4	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.

Control ID	AWS Config Rule	Guidance
4.4	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.
4.4	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
4.4	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
4.4	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
4.4	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
4.4	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
4.4	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
4.4	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
4.4	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
4.4	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	AWS Config Rule	Guidance
4.4	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
4.4	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
4.4	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	AWS Config Rule	Guidance
4.4	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
4.4	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
4.4	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
4.4	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
4.5	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applicati ons within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
4.5	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
4.5	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
4.5	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
4.6	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
4.6	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
4.6	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.

Control ID	AWS Config Rule	Guidance
4.6	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
4.6	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
4.6	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Template

The template is available on GitHub: Operational Best Practices for MAS Notice 655.

Operational Best Practices for MAS TRMG

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Monetary Authority of Singapore (MAS) Technology Risk Managment Guidelines (TRMG) January 2021 and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more MAS TRMG controls. A MAS TRMG January 2021 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
3.3.1	account-part-of-organizations	Centralized management of AWS accounts within AWS

Control ID	AWS Config Rule	Guidance
		Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
5.4.3	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
5.4.3	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	AWS Config Rule	Guidance
6.1.1	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
6.1.2	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	AWS Config Rule	Guidance
6.1.4	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
6.1.4	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
6.1.4	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
6.2.1	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
6.3.1	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
6.4.5	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
6.4.5	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.5	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
6.4.5	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
6.4.5	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.5	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.5	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
6.4.5	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
6.4.5	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.5	elbv2-acm-certificate-requi red	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
6.4.5	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.5	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
6.4.6	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
6.4.6	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
6.4.6	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
6.4.6	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
6.4.6	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
6.4.6	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
6.4.6	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
6.4.6	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
6.4.6	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
6.4.6	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
6.4.7	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
6.4.7	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
6.4.7	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
6.4.7	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
6.4.7	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
6.4.7	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
6.4.7	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
6.4.7	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
6.4.7	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
6.4.7	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
6.4.7	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
6.4.7	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
6.4.7	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
6.4.7	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
6.4.7	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
6.4.8	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provision ed throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
6.4.8	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
6.4.8	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	AWS Config Rule	Guidance
6.4.8	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
6.4.8	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
6.4.8	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
6.4.8	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
6.4.8	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	AWS Config Rule	Guidance
7.2.1	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
7.2.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
7.4.1	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
7.4.1	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	AWS Config Rule	Guidance
7.4.1	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
7.4.1	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
7.4.1	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	AWS Config Rule	Guidance
7.4.1	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.
7.5.5	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
7.5.5	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
7.5.5	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	AWS Config Rule	Guidance
7.5.5	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
7.5.5	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
7.5.5	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
7.5.5	rds-in-backup-plan	To help with data backup processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
7.5.5	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
7.5.5	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
7.5.5	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
7.5.7	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
7.5.7	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
7.5.7	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
7.5.7	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
7.5.7	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
7.5.7	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
7.5.7	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
7.5.7	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
7.5.7	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
7.5.7	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
7.5.7	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
7.5.7	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
8.1.1	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
8.1.1	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
8.1.1	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
8.1.1	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
8.1.1	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
8.1.1	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	AWS Config Rule	Guidance
8.1.1	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
8.1.1	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.
8.1.2	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	AWS Config Rule	Guidance
8.1.2	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
8.1.2	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
8.1.2	opensearch-data-node-fault-tolerance	Amazon OpenSearch Service (OpenSearch Service) requires at least three data nodes for high availability and fault-tolerance. Deploying an OpenSearch Service domain with at least three data nodes ensures cluster operations if a node fails.
8.1.2	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	AWS Config Rule	Guidance
8.1.3	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
8.1.3	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	AWS Config Rule	Guidance
8.1.3	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
8.1.3	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
8.4.1	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	AWS Config Rule	Guidance
8.4.1	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
8.4.1	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	AWS Config Rule	Guidance
8.4.1	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
8.4.1	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	AWS Config Rule	Guidance
8.4.1	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
8.4.1	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requireme nts.

Control ID	AWS Config Rule	Guidance
8.4.1	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
8.4.1	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	AWS Config Rule	Guidance
8.4.1	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
8.4.1	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
8.4.2	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
8.4.2	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
8.4.2	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
8.4.2	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
8.4.2	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
8.4.2	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
8.4.2	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
8.4.2	rds-in-backup-plan	To help with data backup processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
8.4.2	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
8.4.2	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
8.4.2	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
8.4.4	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
8.5.4	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchrono usly replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	AWS Config Rule	Guidance
8.5.4	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
9.1.1	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
9.1.1	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	AWS Config Rule	Guidance
9.1.1	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
9.1.1	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
9.1.1	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
9.1.1	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
9.1.1	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
9.1.1	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
9.1.1	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
9.1.1	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
9.1.1	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
9.1.1	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
9.1.1	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
9.1.1	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
9.1.1	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
9.1.1	secretsmanager-secret-periodic-rotation	This rule ensures AWS Secrets Manager secrets have periodic rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised. The default value is 90 days.

Control ID	AWS Config Rule	Guidance
9.1.1	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.2	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
9.1.2	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
9.1.2	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.2	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
9.1.2	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
9.1.2	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
9.1.3	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
9.1.3	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
9.1.3	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
9.1.3	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
9.1.3	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
9.1.3	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
9.1.3	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
9.1.3	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
9.1.3	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
9.1.3	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
9.1.3	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
9.1.3	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
9.1.3	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
9.1.3	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.3	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
9.1.3	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
9.1.3	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
9.1.3	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
9.1.4	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
9.1.5	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
9.1.5	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
9.1.5	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
9.1.5	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
9.1.6	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.7	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
9.1.7	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
9.1.7	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
9.1.7	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.1.7	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
9.1.7	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
9.2.1	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	AWS Config Rule	Guidance
9.2.1	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
9.2.1	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
9.2.1	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
9.2.1	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
9.2.1	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrai l logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrai l delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
9.2.1	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	AWS Config Rule	Guidance
9.2.1	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
9.2.1	multi-region-cloudtrail-ena bled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containin g API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
9.2.1	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.2.1	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
9.2.2	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
9.2.2	cloud-trail-cloud-watch-logs- enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
9.2.2	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
9.2.2	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
9.2.2	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	AWS Config Rule	Guidance
9.2.2	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
9.2.2	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	AWS Config Rule	Guidance
9.2.2	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
9.2.2	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
9.2.2	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
9.2.2	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
9.3.1	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
9.3.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
9.3.1	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
9.3.1	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
9.3.1	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
9.3.1	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
9.3.1	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
9.3.1	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
9.3.1	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
9.3.1	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
9.3.1	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
9.3.1	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
9.3.1	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
9.3.1	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
9.3.1	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
10.1.1	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
10.1.1	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
10.1.1	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
10.1.1	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
10.1.1	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
10.1.1	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
10.1.1	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
10.1.1	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
10.1.1	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
10.1.1	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
10.1.1	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
10.1.1	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
10.1.1	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
10.1.1	elbv2-acm-certificate-requi red	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
10.1.1	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
10.1.1	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
10.1.1	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
10.1.1	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
10.1.1	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
10.1.1	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
10.1.1	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
10.1.1	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
10.1.1	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
10.1.1	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
10.2.1	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
10.2.1	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
10.2.1	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
10.2.2	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	AWS Config Rule	Guidance
10.2.3	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.
10.2.3	cmk-backing-key-rotation-en abled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
10.2.3	kms-cmk-not-scheduled-for-d eletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	AWS Config Rule	Guidance
11.1.1 (a)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
11.1.1 (a)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
11.1.1 (a)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (a)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
11.1.1 (a)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
11.1.1 (a)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (a)	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
11.1.1 (a)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
11.1.1 (a)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (a)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
11.1.1 (b)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
11.1.1 (b)	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
11.1.1 (b)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
11.1.1 (b)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
11.1.1 (b)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
11.1.1 (b)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
11.1.1 (b)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
11.1.1 (b)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
11.1.1 (b)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
11.1.1 (b)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
11.1.1 (b)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
11.1.1 (b)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
11.1.1 (b)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
11.1.1 (b)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestric ted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
11.1.1 (b)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
11.1.1 (b)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
11.1.1 (b)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
11.1.1 (b)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
11.1.1 (b)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
11.1.1 (b)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
11.1.1 (b)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
11.1.1 (b)	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
11.1.1 (b)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
11.1.1 (b)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
11.1.1 (b)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
11.1.1 (b)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	AWS Config Rule	Guidance
11.1.1 (b)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
11.1.3	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
11.1.3	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
11.1.3	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	AWS Config Rule	Guidance
11.1.3	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
11.1.3	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
11.1.3	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.3	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
11.1.3	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpecte d privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
11.1.3	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
11.1.3	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
11.1.3	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
11.1.3	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authentic ate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principal s to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative information about each principal.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
11.1.3	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
11.1.3	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
11.1.3	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
11.1.3	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
11.1.3	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
11.1.3	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
11.1.3	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	AWS Config Rule	Guidance
11.1.3	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryptio n at rest to help protect that data.
11.1.3	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.3	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
11.1.3	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.3	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
11.1.3	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
11.1.3	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.3	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
11.1.3	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
11.1.3	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
11.1.3	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
11.1.3	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
11.2.1	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
11.2.2	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
11.2.2	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
11.2.2	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.2	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
11.2.2	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
11.2.2	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connectio n.
11.2.2	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.2	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
11.2.2	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
11.2.2	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.
11.2.2	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
11.2.2	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
11.2.2	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.2	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
11.2.2	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.2	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
11.2.2	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
11.2.2	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
11.2.2	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
11.2.2	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
11.2.2	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	AWS Config Rule	Guidance
11.2.2	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
11.2.2	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
11.2.4	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
11.2.4	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
11.2.4	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.4	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
11.2.4	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
11.2.4	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
11.2.4	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.
11.2.4	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
11.2.4	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
11.2.4	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	AWS Config Rule	Guidance
11.2.4	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.
11.2.4	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.4	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
11.2.4	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
11.2.4	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
11.2.4	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
11.2.4	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
11.2.4	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthori zed users.
11.2.4	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
11.2.4	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
11.2.4	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
11.3.1	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	AWS Config Rule	Guidance
11.3.5	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
11.3.5	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
11.3.5	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
11.3.5	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
11.4.2	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	AWS Config Rule	Guidance
11.4.2	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
11.4.2	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	AWS Config Rule	Guidance
11.4.2	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
11.5.2	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
12.1.1	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
12.1.1	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
12.1.1	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
12.1.1	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
12.2.2	api-gw-execution-logging-en abled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
12.2.2	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
12.2.2	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
12.2.2	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
12.2.2	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	AWS Config Rule	Guidance
12.2.2	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
12.2.2	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
12.2.2	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	AWS Config Rule	Guidance
12.2.2	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
12.2.2	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
12.2.2	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
12.2.2	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
12.2.2	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
12.2.2	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
12.2.2	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
12.2.2	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.

Control ID	AWS Config Rule	Guidance
12.2.4	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
12.2.4	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	AWS Config Rule	Guidance
12.2.5	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
12.2.5	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
12.2.5	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
12.2.5	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
12.3.2	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
12.3.2	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	AWS Config Rule	Guidance
12.3.2	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
14.1.2	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
14.1.2	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
14.1.2	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
14.1.2	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
14.1.2	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
14.1.2	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
14.1.2	elbv2-acm-certificate-requi red	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	AWS Config Rule	Guidance
14.1.2	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
14.1.2	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
14.1.3	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applicati ons or APIs against common web exploits. These web exploits may affect availabil ity, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
14.1.3	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
14.1.3	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
14.1.3	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregate s, organizes, and prioritiz es the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
14.2.2	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
14.2.2	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
14.2.2	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
14.2.2	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
14.2.2	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
14.2.2	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
14.2.2	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
14.2.2	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	AWS Config Rule	Guidance
14.2.2	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
14.2.2	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
14.2.2	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
14.2.2	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
14.2.6	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	AWS Config Rule	Guidance
14.2.6	ec2-ebs-encryption-by-defau lt	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
14.2.6	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
14.2.6	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
14.2.6	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
14.2.6	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryptio n at rest to help protect that data.
14.2.6	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
14.2.6	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for MAS TRMG.

Operational Best Practices for Monitoring

This conformance pack contains AWS Config rules based on monitoring within AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Monitoring.

Operational Best Practices for NBC TRMG

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the National Bank of Cambodia's (NBC) Technology Risk Management (TRM) Guidelines framework and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NBC TRM Guideline. An NBC TRM Guideline can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the National Bank of Cambodia's (NBC) Technology Risk Management (TRM) Guidelines framework, which can be accessed here: National Bank of Cambodia: Technology Risk Management Guidelines.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the

Control ID	Control Description	AWS Config Rule	Guidance
	designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/ contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all		principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
	users and - Considering de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

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Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

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Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

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Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implementation of role-based access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modification of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

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3.1.1(d)	d) Among the important controls that need to be considered are: - A systematic process of applying and authorising the creation of user IDs and the access control matrix - Conducting a risk assessment and granting access rights based on the same. - Implement ation of role-base d access control designed to ensure effective segregation of duties - Changing default user names and/or passwords of systems and prohibiting sharing of user IDs and passwords of generic accounts - Modificat ion of access rights whenever there is a change in role or responsibility and removal of access rights on cessation of employment/	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

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Control ID	Control Description	AWS Config Rule	Guidance
	contract - Processes to notify in a timely manner the informati on security function regarding user addi tions, deletions and role changes - Periodic reconcili ation of user IDs in a system and actual users required to have access and deletion of any unnecessa ry IDs, if any - Auditing, logging and monitoring of access to IT assets by all users and - Consideri ng de-activating user IDs of users of critical applications who are on prolonged leave		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identifie d and their actions are auditable.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identified and their actions are auditable.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identified and their actions are auditable.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identified and their actions are auditable.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identifie d and their actions are auditable.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identifie d and their actions are auditable.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
3.1.1(f)	f) For accountability purpose, ensure that users and IT assets are uniquely identifie d and their actions are auditable.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

Control ID	Control Description	AWS Config Rule	Guidance
	data from unauthori sed access		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
	data from unauthori sed access		

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3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	data from unauthori sed access		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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3.1.1(h)	h) System administrators, security officers, programmers and staff performing critical operations invariably possess the capability to inflict severe damage on the financial systems they maintain or operate by virtue of their job functions and privileged access. Personnel with elevated system access entitlements should be closely supervised with all their systems activities logged, as they have inside knowledge and the resources to circumvent systems controls and security procedures. Some of the control and security practices enumerated below need to be considered: - Implementing two-factor authentication for privileged users - Instituti	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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Control ID	Control Description	AWS Config Rule	Guidance
	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

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	ng strong controls over remote access by privileged users - Restricting the number of privilege d users - Granting privileged access on a ‘need-to-have’ or ‘need-to-do’ basis - Maintaining audit logging of system activities performed by privileged users - Ensuring that privileged users do not have access to systems logs in which their activities are being captured - Conducting regular audit or managemen t review of the logs - Prohibiting sharing of privileged IDs and their access codes - Disallowing vendors and contracto rs from gaining privileged access to systems without close supervision and monitoring and _ Protecting backup		

Control ID	Control Description	AWS Config Rule	Guidance
	data from unauthori sed access		
3.1.2(a)	a) The BFI should install network security devices, such as firewalls, anti-virus/anti-malware software as well as intrusion detection and prevention systems, at critical junctures of its IT infrastructure, to protect the network perimeters.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
3.1.2(a)	a) The BFI should install network security devices, such as firewalls, anti-virus/anti-malware software as well as intrusion detection and prevention systems, at critical junctures of its IT infrastructure, to protect the network perimeters.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

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3.1.2(a)	a) The BFI should install network security devices, such as firewalls, anti-virus/anti-malware software as well as intrusion detection and prevention systems, at critical junctures of its IT infrastructure, to protect the network perimeters.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(c)	c) Controls should be implemented to ensure the security of information in networks and the protection of connected services from unauthorised access. In particular, the following items should be considered: - Responsibilities and procedures for the management of networking equipment should be established - Operational responsibility for networks should be separated from computer operations where appropriate - Special controls should be established to safeguard the confidentiality and integrity of data passing over public networks or over wireless networks and to protect the connected systems and applications	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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3.1.2(c)	c) Controls should be implemented to ensure the security of information in networks and the protection of connected services from unauthorised access. In particular, the following items should be considered: - Responsibilities and procedures for the management of networking equipment should be established - Operational responsibility for networks should be separated from computer operations where appropriate - Special controls should be established to safeguard the confidentiality and integrity of data passing over public networks or over wireless networks and to protect the connected systems and applications	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

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	(include network encryption protocols when connectin g to untrusted systems/ networks. - Appropriate logging and monitoring should be applied to enable recording and detection of action s that may affect, or are relevant to, information security - Management activitie s should be closely coordinated both to optimise the service to the organisation and to ensure that controls are consisten tly applied across the information proces sing infrastructure - Systems on the network should be authenticated and - Untrusted system connections to the network should be restricted		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentication, encryption and network connection controls - Technical parameters required for secured connection with the network services in accordance with the security and network connection rules and - Procedures for the network service usage to restrict access to network services or applications, where necessary	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	alb-http-drop-inva lid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentication, encryption and network connection controls - Technical parameters required for secured connection with the network services in accordance with the security and network connection rules and - Procedures for the network service usage to restrict access to network services or applications, where necessary	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2(e)	e) Network services can range from simple unmanaged bandwidth to sophisticated services such as VPN, Voice over IP, VSAT, etc. Security features of network services should be: - Technology applied for security of network services, such as authentic ation, encryption and network connection controls - Technical parameters required for secured connectio n with the network services in accordance with the security and network connection rules and - Procedure s for the network service usage to restrict access to network services or applications, where necessary	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
3.1.3(e)	e) Use encryption to protect communication channels between the remote access device and the institution to restrict the risks related to network spoofing.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user location, duration, and purpose for all remote access including all activities carried out through remote access	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
3.1.3(g)	g) Maintain logs for remote access communications. Logs should include the date, time, user, user loca tion, duration, and purpose for all remote access including all activities carried out through r emote access	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(i)	i)Enforce two-factor authentication process for remote access (for example, PIN based token card with a one-time random password generator, or token based PKI)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(i)	i)Enforce two-factor authentication process for remote access (for example, PIN based token card with a one-time random password generator, or token based PKI)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(i)	i)Enforce two-factor authentication process for remote access (for example, PIN based token card with a one-time random password generator, or token based PKI)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3(i)	i)Enforce two-factor authentication process for remote access (for example, PIN based token card with a one-time random password generator, or token based PKI)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deploymen t of a patch (for example, redeploym ent of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deployment of a patch (for example, redeployment of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deploymen t of a patch (for example, redeploym ent of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deploymen t of a patch (for example, redeploym ent of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deploymen t of a patch (for example, redeploym ent of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4(c)(e)	c) The patch management process should include aspects like: - Determining methods of obtaining and validating patches for ensuring that the patch is from an authorised source - Identifying vulnerabilities that are applicable to applications and systems used by the organisation - Assessing the business impact of implementing patches (or not implementing a particular patch) - Ensuring patches are tested - Describing methods for deploying patches, for example automatically - Reporting on the status of patch deployment across the organisation and - Including methods for dealing with the	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
	failed deploymen t of a patch (for example, redeploym ent of the patch). e) BFIs should deploy automated patch management tools and software update tools for all systems for which such tools are available and safe		
3.1.5(d)(e)	d) Appropriate key management requires secure processes for generating, storing, archiving, retriev ing, distributing, retiring and destroyin g cryptographic keys e) All cryptogra phic keys should be protected against modification and loss. In addition, secret and private keys need protection against unauthorised use as well as disclosur e. Equipment used to generate, store and archive keys should be physically protected	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(d)(e)	d) Appropriate key management requires secure processes for generating, storing, archiving, retrieving, distributing, retiring and destroying cryptographic keys e) All cryptographic keys should be protected against modification and loss. In addition, secret and private keys need protection against unauthorised use as well as disclosure. Equipment used to generate, store and archive keys should be physically protected	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(d)(e)	d) Appropriate key management requires secure processes for generating, storing, archiving, retrieving, distributing, retiring and destroying cryptographic keys e) All cryptographic keys should be protected against modification and loss. In addition, secret and private keys need protection against unauthorised use as well as disclosure. Equipment used to generate, store and archive keys should be physically protected	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(d)(e)	d) Appropriate key management requires secure processes for generating, storing, archiving, retrieving, distributing, retiring and destroying cryptographic keys e) All cryptographic keys should be protected against modification and loss. In addition, secret and private keys need protection against unauthorised use as well as disclosure. Equipment used to generate, store and archive keys should be physically protected	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	kms-cmk-not-schedu led-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	cmk-backing-key-ro tation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	acm-certificate-ex piration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundatio nal Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5(f)	f) A key managemen t system should be based on an agreed set of standards , procedures and secure methods for: - generating keys for different cryptogra phic systems and different applicati ons - issuing and obtaining public key certificates - distribut ing keys to intended entities, including how keys should be activated when received - storing keys, including how authorised users obtain access to keys - changing or updating keys including rules on when keys should be changed and how this will be done - dealing with compromised keys - revoking keys including how keys should be withdrawn or deactivated, for example when keys have been compromis	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
	ed or when a user leaves an organisat ion (in which case keys should also be archived) - recoverin g keys that are lost or corrupted - backing up or archiving keys - destroying keys, and - logging and auditing of key management related activities.		
3.1.6(a)	a) The BFI should deploy a combinati on of automated tools and manual techniques to perform a compreh ensive VA on a periodic basis. For web-based external facing systems, the scope of VA should include common web vulnerabilities such as SQL injection and cross-site scripting.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.6(a)	a) The BFI should deploy a combination of automated tools and manual techniques to perform a comprehensive VA on a periodic basis. For web-based external facing systems, the scope of VA should include common web vulnerabilities such as SQL injection and cross-site scripting.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
3.1.6(a)	a) The BFI should deploy a combination of automated tools and manual techniques to perform a comprehensive VA on a periodic basis. For web-based external facing systems, the scope of VA should include common web vulnerabilities such as SQL injection and cross-site scripting.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
3.1.6(c)	c) The BFI should establish a process to remediate the issues identifie d in VA & PT and perform subsequen t revalidation of the remediation to validate that gaps are fully addressed.	vuln-mitigated-acc epted(Process Check)	Ensure newly identified vulnerabi lities are remediate d or documented as accepted risks. Vulnerabilities should be remediate d or accepted as risks according to your organizat ions compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.6(f)	f) The security function should provide status updates regarding the number of unmitigated, critical vulnerabilities, for each department/ division, and plan for mitigating to senior management on a periodic basis	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.8	User training and awareness	security-awareness-program-exists(Process Check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive informati on such as system documentation, application source code, and productio n transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptogra phic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.10(b)	b) Sensitive information such as system documentation, application source code, and production transaction data should have more extensive controls to guard against alteration (for example, integrity checkers, cryptographic hashes). Furthermore, policies should minimise the distribution of sensitive information, including printouts that contain the information.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former ve rsion of the system or application if a problem is encounter ed during or after the deployment.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former ve rsion of the system or application if a problem is encounter ed during or after the deployment.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former ve rsion of the system or application if a problem is encounter ed during or after the deployment.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former ve rsion of the system or application if a problem is encounter ed during or after the deployment.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former ve rsion of the system or application if a problem is encounter ed during or after the deployment.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(h)	h) To minimise risks associated with changes, BFIs should perform backups of affected systems or applications prior to the change. BFIs should establish a rollback plan to revert to a former version of the system or application if a problem is encountered during or after the deployment.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and troubleshooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investigations and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
3.2.1(k)	k) Audit and security logs are useful information which facilitates investiga tions and trouble shooting. The BFI should ensure that the logging facility is enabled to record activities that are performed during the migration process.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.3(a)	a) Develop and implement processes for preventing, detecting, analysing and responding to information security incidents.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.3(a)	a) Develop and implement processes for preventing, detecting, analysing and responding to information security incidents.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	dynamodb-autoscali ng-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/writ e capacity to handle sudden increases in traffic, without throttling.
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associated with maintaining high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
3.3.1(a)	a) Consider important factors associated with maintaining high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associated with maintaining high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
3.3.1(a)	a) Consider important factors associated with maintaining high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	dynamodb-throughput-limit-check	Enable this rule to ensure that provision ed throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionall y set accountRC UThresholdPercenta ge (Config Default: 80) and accountWC UThresholdPercenta ge (Config Default: 80) parameters. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1(a)	a) Consider important factors associate d with maintaini ng high system availability, adequate capacity, reliable performance, fast response time, scalability as part of the system design.	lambda-concurrency-check	This rule ensures that a Lambda function' s concurrency high and low limits are established. This can assist in baselinin g the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(a)(b)(c)(f)(j)	a) Ensure that records of user access are uniquely identified and logged for audit and review purposes. b) Have accountability and identification of unauthorised access is documented. c) Enable audit logging of system activities performed by privileged users. f) Ensure appropriate logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security. j) Ensure event logging sets the foundation for automated monitoring systems which are capable of generating consolidated reports and alerts on system security.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(f)	f) Ensure appropria te logging and monitoring should be applied to enable recording and detection of actions that may affect, or are relevant to, information security.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activities - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successful and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transactions executed by users in applications and online customer transaction	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.4(g)	g) Ensure event logs include, when relevant: - User IDs - System activitie s - Dates, time and details of key events, for example log-on and log-off - Device identity or location if possible and system identifier - Records of successful and rejected system access attempts - Records of successfu l and rejected data and other resource access attempts - Changes to system configuration - Use of privileges - Use of system utilities and applications - Files accessed and the kind of access - Network addresses and protocols - Alarms raised by the access control system and - Records of transacti ons executed by users in applications and online customer transaction	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(a)(h)	a) BFIs need to ensure suitable security measures for their web applications and take reasonable mitigating measures against various web security risks. h) BFIs need to ensure suitable security measures for their web applications and take reasonable mitigating measures against various web security risks	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
3.6.1(a)(h)	a) BFIs need to ensure suitable security measures for their web applications and take reasonable mitigating measures against various web security risks. h) BFIs need to ensure suitable security measures for their web applications and take reasonable mitigating measures against various web security risks	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryptio n solution consideri ng the degree of confidentiality and integrity required.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryptio n solution consideri ng the degree of confidentiality and integrity required.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
3.6.1(b)	b) BFIs need to evaluate security requirements associated with their internet banking systems and other relevant systems and adopt an encryption solution considering the degree of confidentiality and integrity required.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(d)	d) BFIs providing internet banking should be responsiv e to unusual network traffic conditions/ system performan ce and sudden surge in system resource utilisation which could be an indicatio n of a DDoS attack. Consequently, the success of any pre-emptive and reactive actions depends on the deploymen t of appropriate tools to effectively detect, monitor and analyse anomalies in networks and systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(d)	d) BFIs providing internet banking should be responsiv e to unusual network traffic conditions/ system performan ce and sudden surge in system resource utilisation which could be an indicatio n of a DDoS attack. Consequently, the success of any pre-emptive and reactive actions depends on the deploymen t of appropriate tools to effectively detect, monitor and analyse anomalies in networks and systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(d)	d) BFIs providing internet banking should be responsive to unusual network traffic conditions/ system performance and sudden surge in system resource utilisation which could be an indication of a DDoS attack. Consequently, the success of any pre-emptive and reactive actions depends on the deployment of appropriate tools to effectively detect, monitor and analyse anomalies in networks and systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(d)	d) BFIs providing internet banking should be responsiv e to unusual network traffic conditions/ system performan ce and sudden surge in system resource utilisation which could be an indicatio n of a DDoS attack. Consequently, the success of any pre-emptive and reactive actions depends on the deploymen t of appropriate tools to effectively detect, monitor and analyse anomalies in networks and systems.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(d)	d) BFIs providing internet banking should be responsiv e to unusual network traffic conditions/ system performan ce and sudden surge in system resource utilisation which could be an indicatio n of a DDoS attack. Consequently, the success of any pre-emptive and reactive actions depends on the deploymen t of appropriate tools to effectively detect, monitor and analyse anomalies in networks and systems.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1(e)	e) BFIs need to regularly assess information security vulnerabilities and evaluate the effectiveness of the existing IT security risk management framework, making any necessary adjustments to ensure emerging vulnerabilities are addressed in a timely manner. This assessment should also be conducted as part of any material change.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environme nt. b) Reduce attack surface and vulnerabi lities.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4(a)(b)	a) Restrict internet access & segregate critical systems from General IT environment. b) Reduce attack surface and vulnerabilities.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Template

The template is available on GitHub: Operational Best Practices for NBC TRMG.

Operational Best Practices for NERC CIP BCSI

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the North American Electric Reliability Corporation Critical Infrastructure Protection Standards (NERC CIP) for BES Cyber System Information (BCSI), CIP-004-7 & CIP-011-3, and AWS Config managed rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more NERC CIP controls applicable to BCSI. A NERC CIP control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch dashboards multi-tenancy, and HTTP basic authentication for OpenSearch and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-004-7-R6-Part 6.1	Each Responsible Entity shall implement one or more documented access management program(s) to authorize, verify, and revoke provisioned access to BCSI pertaining to the “Applicable Systems” identified in CIP-004-7 Table R6 – Access Management for BES Cyber System Information that collectively include each of the applicable requirement parts in CIP-004-7 Table R6 – Access Management for BES Cyber System Information. To be considered access to BCSI in the context of this requirement, an individual has both the ability to obtain and use BCSI. Provisioned access is to be considered the result of the specific actions taken to provide	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
	an individual(s) the means to access BCSI (for example, may include physical keys or access cards, users and associated rights and privileges, encryption keys). Part 6.1: Prior to provision ing, authorize (unless already authorize d according to Part 4.1.) based on need, as determined by the Responsible Entity, except for CIP Exceptional Circumstances: 6.1.1. Provisioned electroni c access to electronic BCSI		

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	ecr-private-tag-immutability-enabled	Enable Elastic Container Repository (ECR) Tag Immutability to prevent image tags on your ECR images from being overwritten. Previously, tags could be overwritten requiring manual methodologies to uniquely identify an image.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-cluster-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database cluster(s).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	rds-instance-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database instance(s).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	redshift-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Redshift cluster(s).

Control ID	Control Description	AWS Config Rule	Guidance
CIP-011-3-R1-Part 1.2	Each Responsible Entity shall implement one or more documented information protection program(s) that collectively includes each of the applicable requirement parts in CIP-011-3 Table R1 – Information Protection. Part 1.2: Method(s) to protect and securely handle BCSI to mitigate risks of compromising confidentiality.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Template

The template is available on GitHub: Operational Best Practices for NERC CIP BCSI.

Operational Best Practices for NCSC Cloud Security Principles

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the UK National Cyber Security Centre (NCSC) Cloud Security Principles and AWS managed Config rules. Each Config rule applies to a specific

AWS resource, and relates to one or more UK NCSC Cloud Security Principles controls. A UK NCSC Cloud Security Principles control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the UK NCSC Cloud Security Principles (National Cyber Security Centre | Cloud security guidance), with such public sector information licensed under the Open Government Licence v3.0. The Open Government Licence should can be accessed here: Open Government Licence for public sector information.

Control ID	Control Description	AWS Config Rule	Guidance
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundatio

Control ID	Control Description	AWS Config Rule	Guidance
			nal Security Best Practices value: 90). The actual value should reflect your organization's policies.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1. Data in transit protection	User data transiting networks should be adequately protected against tampering and eavesdropping.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
2. Asset protection and resilience	Your data (and the assets storing or processing it) should be adequately protected.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
5. Operational security	Services must be operated and managed in a way to impede, detect or prevent attacks.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
7. Secure development	Cloud services should be designed, developed and deployed in a way that minimises and mitigates threats to their security.	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
7. Secure development	Cloud services should be designed, developed and deployed in a way that minimises and mitigates threats to their security.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
7. Secure developme nt	Cloud services should be designed, developed and deployed in a way that minimises and mitigates threats to their security.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.
9. Secure user management	Providers should make tools available to securely manage your use of their service.	account-part-of-or ganizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsist ent account configura tions, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
9. Secure user management	Providers should make tools available to securely manage your use of their service.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
9. Secure user management	Providers should make tools available to securely manage your use of their service.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	rds-instance-iam-authentication-enabled	Ensure an AWS Identity and Access Management (IAM) authentication is enabled on Amazon Relational Database Service (Amazon RDS) instances to control access to systems and assets. This enforces network traffic to and from the database to be encrypted using Secure Sockets Layer (SSL). You are not required to store user credentials in the database, as authentication is managed externally.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individua ls.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individua ls.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individua ls.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
10. Identity and authentication	Access to service interfaces should be constrained to authenticated and authorised individuals.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ecs-container-insights-enabled	Monitoring is an important part of maintaining the reliability, availability, and performance of Amazon Elastic Container Service (ECS) and your AWS solutions. Container Insights also provides diagnostic information, such as container restart failures, to help you isolate issues and resolve them quickly.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
11. External interface protection	All external or less trusted interfaces to the service should be identified and defended.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
12. Secure service administration	Cloud providers should recognise the high value of administration systems.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
13. Audit information for users	Providers should supply logs needed to monitor access to your service, and the data held within it.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
13. Audit information for users	Providers should supply logs needed to monitor access to your service, and the data held within it.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
13. Audit information for users	Providers should supply logs needed to monitor access to your service, and the data held within it.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
13. Audit information for users	Providers should supply logs needed to monitor access to your service, and the data held within it.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Template

The template is available on GitHub: Operational Best Practices for NCSC Cloud Security Principles.

Operational Best Practices for NCSC Cyber Assesment Framework

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between UK National Cyber Security Centre (NCSC) Cyber Assessment Framework (CAF) controls and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more UK NCSC CAF controls. A UK NCSC CAF control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This sample conformance pack template contains mappings to controls within the UK NCSC CAF (National Cyber Security Centre | NCSC CAF guidance), with such public sector information licensed under the Open Government Licence v3.0. The Open Government Licence should can be accessed here: Open Government Licence for public sector information.

Control ID	Control Description	AWS Config Rule	Guidance
A3.a#Asset Management	Everything required to deliver, maintain or support networks and information systems necessary for the operation of essential functions is determined and understood. This includes data, people and systems, as well as any supporting infrastructure (such as power or cooling).	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.
A3.a#Asset Management	Everything required to deliver, maintain or support networks and information systems necessary for the operation of essential functions is determined and understood. This includes data, people and systems, as well as any supporting infrastructure (such as power or cooling).	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system

Control ID	Control Description	AWS Config Rule	Guidance
			patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.
A3.a#Asset Management	Everything required to deliver, maintain or support networks and information systems necessary for the operation of essential functions is determined and understood. This includes data, people and systems, as well as any supporting infrastructure (such as power or cooling).	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
A3.a#Asset Management	Everything required to deliver, maintain or support networks and information systems necessary for the operation of essential functions is determined and understood. This includes data, people and systems, as well as any supporting infrastructure (such as power or cooling).	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.
A3.a#Asset Management	Everything required to deliver, maintain or support networks and information systems necessary for the operation of essential functions is determined and understood. This includes data, people and systems, as well as any supporting infrastructure (such as power or cooling).	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a#Identity Verification, Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
B2.a Identity Verification,Authentication and Authorisation	You robustly verify,#authenticate and authorise access to the networks and information systems supporting your essential function.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
B2.b Device Management	You fully know and have trust in the devices that are used to access your networks, informati on systems and data that support your essential function.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B2.b Device Management	You fully know and have trust in the devices that are used to access your networks, informati on systems and data that support your essential function.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	ecs-containers-non privileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitio ns should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-writ e permissions.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.c Privileged User Management	You closely manage privileged user access to networks and information systems supporting the essential function.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good management and maintenance of identity and access control for your networks and information systems supporting the essential function.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good management and maintenance of identity and access control for your networks and information systems supporting the essential function.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good management and maintenance of identity and access control for your networks and information systems supporting the essential function.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good management and maintenance of identity and access control for your networks and information systems supporting the essential function.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d#Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good management and maintenance of identity and access control for your networks and information systems supporting the essential function.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B2.d Identity and Access Management (IdAM)	You assure good managemen t and maintenan ce of identity and access control for your networks and information systems supporting the essential function.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
B3.a Understanding Data	You have a good understanding of data important to the operation of the essential function, where it is stored, where it travels and how unavailability or unauthorised access, modificat ion or deletion would adversely impact the essential function.# also applies to third parties storing or accessing data important to the operation of essential functions.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.b Data in Transit	You have protected the transit of data important to the operation of the essential function.#This includes the transfer of data to third parties.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
B3.c Stored Data	You have protected#stored data important to the operation of the essential function.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	alb-http-drop-inva lid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	dynamodb-autoscali ng-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/writ e capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	dynamodb-throughput-limit-check	Enable this rule to ensure that provision ed throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionall y set accountRC UThresholdPercenta ge (Config Default: 80) and accountWC UThresholdPercenta ge (Config Default: 80) parameters. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	lambda-concurrency-check	This rule ensures that a Lambda function' s concurrency high and low limits are established. This can assist in baselinin g the number of requests that your function is serving at any given time.
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B4.a Secure by Design	You#design security into the network and informati on systems that support the operation c essential functions .#You minimise their attack surface and ensure that the operation of the essential function shoul not be impacted by the exploitation of any single vulnerabi lity.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
B4.b Secure Configuration	You securely configure the#network and information systems that support the operation of essential functions.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B4.b Secure Configuration	You securely configure the#network and information systems that support the operation of essential functions.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
B4.b Secure Configuration	You securely configure the#network and information systems that support the operation of essential functions.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
B4.b Secure Configuration	You securely configure the#network and information systems that support the operation of essential functions.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B4.c#Secure Management	You#manage#your organisat ion's#network and information systems that support the operation of essential functions to enable and maintain security.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.
B4.c#Secure Management	You#manage#your organisat ion's#network and information systems that support the operation of essential functions to enable and maintain security.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
B4.c#Secure Management	You#manage#your organisat ion's#network and information systems that support the operation of essential functions to enable and maintain security.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associati ons to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configura tion state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
B4.d. Vulnerability Management	You#manage known vulnerabi lities in#your#network and informati on systems to prevent adverse impact on the essential functio	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
B5.b Design for Resilience	You#design#the#netwc and information systems supportin g#your#essential functi be resilient to cyber security incidents. Systems are appropriately segregated and resource limitations are mitigated.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
B5.b Design for Resilience	You#design#the#netwc and information systems supportin g#your#essential functi be resilient to cyber security incidents. Systems are appropriately segregated and resource limitations are mitigated.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
B5.b Design for Resilience	You#design#the#netwc and information systems supportin g#your#essential functi be resilient to cyber security incidents. Systems are appropriately segregated and resource limitations are mitigated.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
B5.c Backups	You hold accessible and secured current backups of data and information needed to recover operation of your essential function	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
C1.a Monitoring Coverage	The data sources that you include in your monitoring allow for timely identification of security events which might affect the operation of your essential function.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.b Securing Logs	You hold logging data securely and grant read access only to accounts with business need. No employee should ever need to#modify or delete logging data within an agreed retention period, after which it should be deleted.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
C1.c Generating Alerts	Evidence of potential security incidents contained in your monitoring data is reliably identified and#triggers alerts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.d Identifying Security Incidents	You contextua lise alerts with knowledge of the threat and your#systems, to identify those security incidents that require some form of response.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
C1.d Identifying Security Incidents	You contextua lise alerts with knowledge of the threat and your#systems, to identify those security incidents that require some form of response.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
C1.e Monitoring Tools and Skills	Monitoring staff skills, tools and roles, including any that are outsourced, should reflect governance and reporting requirements, expected threats and the complexities of the network or system data they need to use. Monitoring staff have knowledge of the essential functions they need to protect.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
C1.e Monitoring Tools and Skills	Monitoring staff skills, tools and roles, including any that are outsourced, should reflect governance and reporting requirements, expected threats and the complexities of the network or system data they need to use. Monitoring staff have knowledge of the essential functions they need to protect.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
C1.e Monitoring Tools and Skills	Monitoring staff skills, tools and roles, including any that are outsourced, should reflect governance and reporting requirements, expected threats and the complexities of the network or system data they need to use. Monitoring staff have knowledge of the essential functions they need to protect.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
C2.a System Abnormalities for Attack Detection	You define examples of abnormalities in system behaviour that provide practical ways of detecting malicious activity that is otherwise hard to identify.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
C2.a System Abnormalities for Attack Detection	You define examples of abnormalities in system behaviour that provide practical ways of detecting malicious activity that is otherwise hard to identify.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
D1.c Testing and Exercising	Your#organizat ion carries out exercises to test response plans, using past incidents that affected your (and other) organizat ion, and scenarios that draw on threat intelligence and your risk assessment.	response-plan-exists-maintained (Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel . Having updated and formally documente d response plans can assist in making sure response personnel understand roles, responsibilities and processes to be followed during an incident.

Control ID	Control Description	AWS Config Rule	Guidance
D1.c Testing and Exercising	Your#organization carries out exercises to test response plans, using past incidents that affected your (and other) organization, and scenarios that draw on threat intelligence and your risk assessment.	response-plan-tested (Process Check)	Ensure Incident response and recovery plans are tested. This can assist in understanding if your plan will be effective during an incident and if any gaps or updates need to be addressed.

Template

The template is available on GitHub: Operational Best Practices for NCSC Cyber Assesment Framework.

Operational Best Practices for Networking and Content Delivery Services

This conformance pack contains AWS Config rules based on Networking and Content Delivery Services. For more information, see Networking and Content Delivery on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Networking and Content Delivery Services.

Operational Best Practices for NIST 800-53 rev 4

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST 800-53 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NIST 800-53 controls. A NIST 800-53 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

This Conformance Pack was validated by AWS Security Assurance Services LLC (AWS SAS), which is a team of Payment Card Industry Qualified Security Assessors (QSAs), HITRUST Certified Common Security Framework Practitioners (CCSFPs), and compliance professionals certified to provide guidance and assessments for various industry frameworks. AWS SAS professionals designed this Conformance Pack to enable a customer to align to a subset of the NIST 800-53.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least

Control ID	Control Description	AWS Config Rule	Guidance
			one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundatio ns Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(1)	The organization employs automated mechanisms to support the management of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(3)	The information system automatic ally disables inactive accounts after [Assignment: organization-defined time period].	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatically audits account creation, modification, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	The information system automatic ally audits account creation, modificat ion, enabling, disabling, and removal actions, and notifies [Assignment: organization-defined personnel or roles].	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)(a)	The organization: a. Monitors informati on system accounts for [Assignment: organization-defined atypical use].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundations Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(f)	The organization: f. Creates, enables, modifies, disables, and removes information system accounts in accordance with [Assignment: organization-defined procedures or conditions].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2(g)	The organization: g. Monitors the use of information system accounts.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(g)	The organization: g. Monitors the use of information system accounts.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account management requirements [Assignment: organization-defined frequency].	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
AC-2(j)	The organization: j. Reviews accounts for compliance with account management requirements [Assignment: organization-defined frequency].	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundatio ns Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(j)	The organization: j. Reviews accounts for compliance with account managemen t requirements [Assignment: organization-defined frequency].	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-3	The information system enforces approved authoriza tions for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	The information system enforces approved authorizations for logical access to information and system resources in accordance with applicable access control policies.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-4	The information system enforces approved authorizations for controlling the flow of information within the system and between interconnected systems based on [Assignment: organization-defined information flow control policies].	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines information system access authorizations to support separation of duties.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5c	The organization: c. Defines informati on system access authorizations to support separation of duties.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-account-level-p ublic-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organization employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6	The organizat ion employs the principle of least privilege, allowing only authorized accesses for users (or processes acting on behalf of users) which are necessary to accomplish assigned tasks in accordance with organizational missions and business functions.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	The information system prevents non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(1)	The information system monitors and controls remote access methods.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	The information system implements cryptographic mechanisms to protect the confidentiality and integrity of remote access sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(3)	The information system routes all remote accesses through [Assignment: organization-defined number] managed network access control points.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21(b)	The organization: b. Employs [Assignment: organization-defined automated mechanisms or manual processes] to assist users in making information sharing/collaboration decisions.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defin ed auditable events]; d. Determines that the following events are to be audited within the informati on system: [Assignme nt: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defin ed auditable events]; d. Determines that the following events are to be audited within the informati on system: [Assignme nt: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2(a)(d)	The organization: a. Determines that the information system is capable of auditing the following events: [Assignment: organization-defined auditable events]; d. Determines that the following events are to be audited within the information system: [Assignment: organization-defined audited events (the subset of the auditable events defined in AU-2 a.) along with the frequency of (or situation requiring) auditing for each identified event].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	The information system generates audit records containing informati on that establish es what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)(3)	(1) The organization employs automated mechanisms to integrate audit review, analysis, and reporting processes to support organizational processes for investigation and response to suspicious activities. (3) The organization analyzes and correlates audit records across different repositories to gain organization-wide situational awareness.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	The information system provides the capability to process audit records for events of interest based on [Assignment: organization-defined audit fields within audit records].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
AU-9	The information system protects audit information and audit tools from unauthorized access, modification, and deletion.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9(2)	The informati on system backs up audit records [Assignment: organization-defin ed frequency] onto a physically different system or system component than the system or component being audited.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
AU-11	The organization retains audit records for [Assignment: organization-defin ed time period consistent with records retention policy] to provide support for after-the -fact investigations of security incidents and to meet regulatory and organizational information retention requirements.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12(a)(c)	The informati on system: a. Provides audit record generation capabilit y for the auditable events defined in AU-2 a. at [Assignme nt: organization-defined information system component s]; c. Generates audit records for the events defined in AU-2 d. with the content defined in AU-3.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7(a)(b)	The organization develops a continuous monitoring strategy and implements a continuous monitoring program that includes: a. Establishment of [Assignment: organization-defined metrics] to be monitored; b. Establishment of [Assignment: organization-defined frequencies] for monitoring and [Assignment: organization-defined frequencies] for assessments supporting such monitoring.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	The organization develops, documents , and maintains under configuration control, a current baseline configuration of the information system.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7(a)	The organization: a. Configures the information system to provide only essential capabilities.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	The organization updates the inventory of information system components as an integral part of component installations, removals, and information system updates.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms [Assignment: organization-defined frequency] to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms [Assignment: organization-defined frequency] to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)(a)	The organization: a. Employs automated mechanisms [Assignment: organization-defined frequency] to detect the presence of unauthorized hardware, software, and firmware components within the information system	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system [Assignment: organization-defined frequency consistent with recovery time and recovery point objectives].	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system [Assignment: organization-defined frequency consistent with recovery time and recovery point objectives].	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system [Assignment: organization-defined frequency consistent with recovery time and recovery point objectives].	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organization: b. Conducts backups of system-level information contained in the information system [Assignment: organization-defined frequency consistent with recovery time and recovery point objectives].	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level informati on contained in the information system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives].	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level informati on contained in the information system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives].	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level informati on contained in the information system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives].	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9(b)	The organizat ion: b. Conducts backups of system-level informati on contained in the information system [Assignment: organization-defined frequency consisten t with recovery time and recovery point objectives].	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-autoscali ng-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/writ e capacity to handle sudden increases in traffic, without throttling.
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elb-deletion-prote ction-enabled	This rule ensures that Elastic Load Balancing has deletion protectio n enabled. Use this feature to prevent your load balancer from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilienc e requirements. It uses two tunnels to help ensure connectiv ity in case one of the Site-to-Site VPN connections becomes unavailab le. To protect against a loss of connectiv ity, in case your customer gateway becomes unavailab le, you can set up a second Site-to-S ite VPN connectio n to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	The organizat ion provides for the recovery and reconstitution of the information system to a known state after a disruptio n, compromise, or failure.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2	The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundatio ns Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(11)	(1) The information system implements multifactor authentication for network access to privileged accounts. (11) The information system implements multifactor authentication for remote access to privileged and non-privileged accounts such that one of the factors is provided by a device separate from the system gaining access and the device meets [Assignment: organization-defined strength of mechanism requirements].	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(11)	(1) The information system implements multifactor authentication for network access to privileged accounts. (11) The information system implements multifactor authentication for remote access to privileged and non-privileged accounts such that one of the factors is provided by a device separate from the system gaining access and the device meets [Assignment: organization-defined strength of mechanism requirements].	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)(11)	(1) The information system implements multifactor authentication for network access to privileged accounts. (2) The information system implements multifactor authentication for network access to non- privileged accounts. (11) The information system implements multifactor authentication for remote access to privileged and non-privileged accounts such that one of the factors is provided by a device separate from the system gaining access and the device meets [Assignment: organization-defined strength of mechanism requirements].	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)(2)(11)	(1) The information system implements multifactor authentication for network access to privileged accounts. (2) The information system implements multifactor authentication for network access to non- privileged accounts. (11) The information system implements multifactor authentication for remote access to privileged and non-privileged accounts such that one of the factors is provided by a device separate from the system gaining access and the device meets [Assignment: organization-defined strength of mechanism requirements].	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)(a)(d)(e)	The information system, for password-based authentication: a. Enforces minimum password complexit y of [Assignment: organization-defined requirements for case sensitivity, number of characters, mix of upper-case letters, lower-case letters, numbers, and special characters, including minimum requireme nts for each type]; d. Enforces password minimum and maximum lifetime restrictions of [Assignment: organization- defined numbers for lifetime minimum, lifetime maximum]; e. Prohibits password reuse for [Assignme nt: organization-defin ed number] generatio ns.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundatio ns Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(4)	The organization employs automated tools to determine if password authentic ators are sufficien tly strong to satisfy [Assignment: organization-defined requirements].	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the Centers for Internet Security (CIS) AWS Foundatio ns Benchmark for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value:

Control ID	Control Description	AWS Config Rule	Guidance
			true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organization's policies.
IA-5(7)	The organization ensures that unencrypted static authenticators are not embedded in applications or access scripts or stored on function keys.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	The organization employs automated mechanisms to support the incident handling process.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-6(1)	The organization employs automated mechanisms to assist in the reporting of security incidents.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
IR-7(1)	The organization employs automated mechanisms to increase the availability of incident response-related information and support.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications [Assignment: organization-defined frequency and/or randomly in accordance with organization-defined process] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	vulnerability impact; c. Analyzes vulnerability scan reports and results from security control assessments; d. Remediates legitimate vulnerabilities [Assignment: organization-defined response times], in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e., systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
RA-5	The organization: a. Scans for vulnerabilities in the information system and hosted applications [Assignment: organization-defined frequency and/or randomly in accordance with organization-defined process] and when new vulnerabilities potentially affecting the system/applications are identified and reported; b. Employs vulnerability scanning tools and techniques that facilitate interoperability among tools and automate parts of the vulnerability management process by using standards for: 1. Enumerating platforms, software flaws, and improper configurations; 2. Formatting checklists and test procedures; and 3. Measuring	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	vulnerability impact; c. Analyzes vulnerability scan reports and results from security control assessments; d. Remediates legitimate vulnerabilities [Assignment: organization-defined response times], in accordance with an organizational assessment of risk; and e. Shares information obtained from the vulnerability scanning process and security control assessments with [Assignment: organization-defined personnel or roles] to help eliminate similar vulnerabilities in other information systems (i.e., systemic weaknesses or deficiencies).		

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3(a)	The organization: a. Manages the information system using [Assignment: organization-defined system development life cycle] that incorporates information security considerations.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organizat ion requires the developer of the information system, system component , or information system service to: a. Perform configura tion managemen t during system, component, or service [Selectio n (one or more): design; developme nt; implement ation; operation]; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configura tion management]; c. Implement only organization-appro ved changes to the system, component , or service; d. Document approved changes to the system, component , or service and the potential security	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
	impacts of such changes; and e. Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service [Selection (one or more): design; development; implementation; operation]; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	impacts of such changes; and e. Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service [Selection (one or more): design; development; implementation; operation]; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
	impacts of such changes; and e. Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		

Control ID	Control Description	AWS Config Rule	Guidance
SA-10	The organization requires the developer of the information system, system component, or information system service to: a. Perform configuration management during system, component, or service [Selection (one or more): design; development; implementation; operation]; b. Document, manage, and control the integrity of changes to [Assignment: organization-defined configuration items under configuration management]; c. Implement only organization-approved changes to the system, component, or service; d. Document approved changes to the system, component, or service and the potential security	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	impacts of such changes; and e. Track security flaws and flaw resolution within the system, component, or service and report findings to [Assignment: organization-defined personnel].		
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
SC-2	The information system separates user functionality (including user interface services) from information system management functionality.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
SC-4	The information system prevents unauthorized and unintended informati on transfer from shared system resources.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5	The information system protects against or limits the effects of the following types of denial of service attacks: [Assignment: organization-defined types of denial of service attacks or references to sources for such information] by employing [Assignment: organization-defined security safeguards].	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-bucket-policy-g rantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_gran tee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principal s, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	s3-account-level-p ublic-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	alb-http-drop-inva lid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	The informati on system: a. Monitors and controls communications at the external boundary of the system and at key internal boundarie s within the system; b. Implements subnetworks for publicly accessible system component s that are [Selection: physically; logically] separated from internal organizat ional networks; and c. Connects to external networks or information systems only through managed interface s consisting of boundary protectio n devices arranged in accordance with an organizational security architecture.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
SC-7(3)	The organization limits the number of external network connections to the information system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(3)	The organization limits the number of external network connections to the information system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-account-level-public-access-blocks	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(3)	The organization limits the number of external network connections to the information system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	The organization limits the number of external network connections to the information system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	The information system protects the [Selection (one or more): confidentiality; integrity] of transmitted information.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implements cryptographic mechanisms to [Selection (one or more): prevent unauthorized disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	The information system implement s cryptographic mechanisms to [Selection (one or more): prevent unauthori zed disclosure of information; detect changes to information] during transmission unless otherwise protected by [Assignment: organization-defined alternative physical safeguards].	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-12	The organization establishes and manages cryptogra phic keys for required cryptography employed within the information system in accordanc e with [Assignment: organization-defined requirements for key generation, distribut ion, storage, access, and destruction].	cmk-backing-key-ro tation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC-12	The organization establishes and manages cryptographic keys for required cryptography employed within the information system in accordance with [Assignment: organization-defined requirements for key generation, distribution, storage, access, and destruction].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implement s [Assignment: organization-defined cryptographic uses and type of cryptogra phy required for each use] in accordanc e with applicabl e federal laws, Executive Orders, directives, policies, regulations, and standards.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-13	The information system implement s [Assignment: organization-defined cryptographic uses and type of cryptogra phy required for each use] in accordanc e with applicabl e federal laws, Executive Orders, directives, policies, regulations, and standards.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-13	The information system implements [Assignment: organization-defined cryptographic uses and type of cryptography required for each use] in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	The information system implements FIPS-validated or NSA-approved cryptography in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, and standards.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SC-23	The information system protects the authenticity of communications sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	The information system protects the authenticity of communications sessions.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	The information system protects the authenticity of communications sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confident iality; integrity] of [Assignment: organization-defined information at rest].	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC-28	The information system protects the [Selection (one or more): confident iality; integrity] of [Assignment: organization-defined information at rest].	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28	The information system protects the [Selection (one or more): confidentiality; integrity] of [Assignment: organization-defined information at rest].	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	The organization distributes [Assignment: organization-defined processing and storage] across multiple physical locations.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	The organization distributes [Assignment: organization-defined processing and storage] across multiple physical locations.	rds-cluster-multi-az-enabled	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	The organization distributes [Assignment: organization-defined processing and storage] across multiple physical locations.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
SI-2(2)	The organization employs automated mechanisms [Assignment: organization-defined frequency] to determine the state of information system components with regard to flaw remediation.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms [Assignment: organization-defined frequency] to determine the state of information system components with regard to flaw remediation.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	The organization employs automated mechanisms [Assignment: organization-defined frequency] to determine the state of information system components with regard to flaw remediation.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(1)	The organizat ion connects and configures individua l intrusion detection tools into an information system-wide intrusion detection system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4(2)	The organization employs automated tools to support near real-time analysis of events.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic [Assignment: organization-defined frequency] for unusual or unauthorized activities or conditions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic [Assignment: organization-defined frequency] for unusual or unauthorized activities or conditions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic [Assignment: organization-defined frequency] for unusual or unauthorized activities or conditions.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	The information system monitors inbound and outbound communications traffic [Assignment: organization-defined frequency] for unusual or unauthorized activities or conditions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4(5)	The information system alerts [Assignment: organization-defined personnel or roles] when the following indications of compromise or potential compromise occur: [Assignment: organization- defined compromise indicators].	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	The informati on system alerts [Assignment: organization-defin ed personnel or roles] when the following indicatio ns of compromise or potential compromis e occur: [Assignment: organization- defined compromise indicator s].	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(16)	The organization correlates informati on from monitorin g tools employed throughout the information system.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(a)(b)(c)	The organization: a. Monitors the information system to detect: 1. Attacks and indicators of potential attacks in accordance with [Assignment: organization-defined monitoring objectives]; and 2. Unauthorized local, network, and remote connections; b. Identifies unauthorized use of the information system through [Assignment: organization- defined techniques and methods]; c. Deploys monitoring devices: i. strategically within the information system to collect organization-determined essential information; and (ii) at ad hoc locations within the system to track specific types of transactions of interest to the organization.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7	The organization employs integrity verification tools to detect unauthorized changes to [Assignment: organization-defined software, firmware, and information].	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check of [Assignment: organization-defined software, firmware, and information] [Selection (one or more): at startup; at [Assignment: organization-defined transitional states or security-relevant events]; [Assignment: organization- defined frequency]].	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check of [Assignment: organization-defined software, firmware, and information] [Selection (one or more): at startup; at [Assignment: organization-defined transitional states or security-relevant events]; [Assignment: organization- defined frequency]].	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	The information system performs an integrity check of [Assignment: organization-defined software, firmware, and information] [Selection (one or more): at startup; at [Assignment: organization-defin ed transitional states or security-relevant events]; [Assignment: organization- defined frequency]].	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organizat ion handles and retains information within the informati on system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulatio ns, standards, and operational requirements.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	The organization handles and retains information within the information system and information output from the system in accordance with applicable federal laws, Executive Orders, directives, policies, regulations, standards, and operational requirements.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Template

The template is available on GitHub: Operational Best Practices for NIST 800-53 rev 4.

Operational Best Practices for NIST 800-53 rev 5

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST 800-53 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NIST 800-53 controls. A NIST 800-53 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	Account Management | Automated Audit Actions	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
AC-2(4)	Account Management | Automated Audit Actions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new

Control ID	Control Description	AWS Config Rule	Guidance
			Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
AC-2(4)	Account Management | Automated Audit Actions	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AC-2(4)	Account Management | Automated Audit Actions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	Account Management | Automated Audit Actions	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-2(4)	Account Management | Automated Audit Actions	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	Account Managemen t | Automated Audit Actions	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	Account Management | Automated Audit Actions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(4)	Account Management | Automated Audit Actions	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2(12)	Account Management | Account Monitoring for Atypical Usage	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
AC-2	Account Management	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-2	Account Management	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
AC-3(15)	Access Enforcement | Discretionary and Mandatory Access Control	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
AC-3	Access Enforcement	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
AC-3	Access Enforcement	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
AC-3	Access Enforcement	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-3	Access Enforcement	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
AC-3	Access Enforcement	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-3	Access Enforcement	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-3	Access Enforcement	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-3	Access Enforcement	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-3	Access Enforcement	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-4(26)	Information Flow Enforcement | Audit Filtering Actions	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AC-5	Separation of Duties	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5	Separation of Duties	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
AC-5	Separation of Duties	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5	Separation of Duties	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-5	Separation of Duties	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-5	Separation of Duties	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6(2)	Least Privilege | Non-privileged Access for Nonsecurity Functions	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(2)	Least Privilege | Non-privileged Access for Nonsecurity Functions	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(2)	Least Privilege | Non-privileged Access for Nonsecurity Functions	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(3)	Least Privilege | Network Access to Privileged Commands	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6(9)	Least Privilege | Log Use of Privileged Functions	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AC-6(9)	Least Privilege | Log Use of Privileged Functions	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AC-6(9)	Least Privilege | Log Use of Privileged Functions	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(9)	Least Privilege | Log Use of Privileged Functions	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	Least Privilege | Prohibit Non-privileged Users from Executing Privileged Functions	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
AC-6(10)	Least Privilege | Prohibit Non-privileged Users from Executing Privileged Functions	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
AC-6(10)	Least Privilege | Prohibit Non-privileged Users from Executing Privileged Functions	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-17(2)	Remote Access | Protection of Confidentiality and Integrity Using Encryption	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
AC-21	Information Sharing	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
AC-21	Information Sharing	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
AC-21	Information Sharing	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
AC-21	Information Sharing	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
AC-21	Information Sharing	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
AC-21	Information Sharing	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
AC-21	Information Sharing	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
AC-21	Information Sharing	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
AU-2	Event Logging	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AU-2	Event Logging	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-2	Event Logging	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-2	Event Logging	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-2	Event Logging	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-2	Event Logging	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-3	Content of Audit Records	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-3	Content of Audit Records	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-3	Content of Audit Records	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-3	Content of Audit Records	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-3	Content of Audit Records	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-6(1)	Audit Record Review, Analysis, and Reporting | Automated Process Integration	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)	Audit Record Review, Analysis, and Reporting | Automated Process Integration	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)	Audit Record Review, Analysis, and Reporting | Automated Process Integration	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(1)	Audit Record Review, Analysis, and Reporting | Automated Process Integration	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(3)	Audit Record Review, Analysis, and Reporting | Correlate Audit Record Repositories	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(4)	Audit Record Review, Analysis, and Reporting | Central Review and Analysis	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
AU-6(5)	Audit Record Review, Analysis, and Reporting | Integrated Analysis of Audit Records	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(5)	Audit Record Review, Analysis, and Reporting | Integrated Analysis of Audit Records	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(5)	Audit Record Review, Analysis, and Reporting | Integrated Analysis of Audit Records	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
AU-6(5)	Audit Record Review, Analysis, and Reporting | Integrated Analysis of Audit Records	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
AU-7(1)	Audit Record Reduction and Report Generation | Automatic Processing	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-9(2)	Protection of Audit Information | Store on Separate Physical Systems or Components	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
AU-9(2)	Protection of Audit Information | Store on Separate Physical Systems or Components	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
AU-9(2)	Protection of Audit Information | Store on Separate Physical Systems or Components	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9(7)	Protection of Audit Information | Store on Component with Different Operating System	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-9	Protection of Audit Information	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	Protection of Audit Information	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
AU-9	Protection of Audit Information	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	Protection of Audit Information	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
AU-9	Protection of Audit Information	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
AU-10	Non-repudiation	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
AU-10	Non-repudiation	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-10	Non-repudiation	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-10	Non-repudiation	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-10	Non-repudiation	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-10	Non-repudiation	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
AU-12	Audit Record Generation	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
AU-12	Audit Record Generation	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
AU-12	Audit Record Generation	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
AU-12	Audit Record Generation	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
AU-14(1)	Session Audit | System Start-up	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CA-7	Continuous Monitoring	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
CA-7	Continuous Monitoring	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
CA-7	Continuous Monitoring	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
CA-7	Continuous Monitoring	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CA-7	Continuous Monitoring	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
CA-7	Continuous Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CA-7	Continuous Monitoring	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
CA-9(1)	Internal System Connections | Compliance Checks	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
CA-9(1)	Internal System Connections | Compliance Checks	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
CA-9(1)	Internal System Connections | Compliance Checks	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
CA-9(1)	Internal System Connections | Compliance Checks	rds-instance-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database instance(s).
CA-9(1)	Internal System Connections | Compliance Checks	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
CA-9(1)	Internal System Connections | Compliance Checks	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
CA-9(1)	Internal System Connections | Compliance Checks	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
CA-9(1)	Internal System Connections | Compliance Checks	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CA-9(1)	Internal System Connections | Compliance Checks	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CA-9(1)	Internal System Connections | Compliance Checks	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
CA-9(1)	Internal System Connections | Compliance Checks	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CA-9(1)	Internal System Connections | Compliance Checks	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
CA-9(1)	Internal System Connections | Compliance Checks	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	redshift-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Redshift cluster(s).
CA-9(1)	Internal System Connections | Compliance Checks	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
CA-9(1)	Internal System Connections | Compliance Checks	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CA-9(1)	Internal System Connections | Compliance Checks	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2(2)	Baseline Configuration | Automation Support for Accuracy and Currency	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2(2)	Baseline Configuration | Automation Support for Accuracy and Currency	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2(2)	Baseline Configuration | Automation Support for Accuracy and Currency	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2(2)	Baseline Configuration | Automation Support for Accuracy and Currency	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2(2)	Baseline Configuration | Automation Support for Accuracy and Currency	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2(2)	Baseline Configura tion | Automation Support for Accuracy and Currency	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
CM-2	Baseline Configuration	rds-instance-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database instance(s).

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
CM-2	Baseline Configuration	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-2	Baseline Configuration	redshift-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Redshift cluster(s).
CM-2	Baseline Configuration	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
CM-3(6)	Configuration Change Control | Cryptography Management	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
CM-3(6)	Configuration Change Control | Cryptography Management	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
CM-3(6)	Configuration Change Control | Cryptography Management	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
CM-3(6)	Configuration Change Control | Cryptography Management	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
CM-3(6)	Configuration Change Control | Cryptography Management	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
CM-3(6)	Configuration Change Control | Cryptography Management	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
CM-3(6)	Configuration Change Control | Cryptography Management	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
CM-3(6)	Configuration Change Control | Cryptography Management	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
CM-3(6)	Configuration Change Control | Cryptography Management	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
CM-3(6)	Configuration Change Control | Cryptography Management	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
CM-3(6)	Configuration Change Control | Cryptography Management	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3(6)	Configuration Change Control | Cryptography Management	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
CM-3(6)	Configuration Change Control | Cryptography Management	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CM-3	Configuration Change Control	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
CM-3	Configuration Change Control	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7	Least Functionality	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
CM-7	Least Functionality	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-7	Least Functionality	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	System Component Inventory | Updates During Installation and Removal	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(1)	System Component Inventory | Updates During Installation and Removal	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(2)	System Component Inventory | Automated Maintenance	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)	System Component Inventory | Automated Unauthorized Component Detection	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)	System Component Inventory | Automated Unauthorized Component Detection	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8(3)	System Component Inventory | Automated Unauthorized Component Detection	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
CM-8(3)	System Component Inventory | Automated Unauthorized Component Detection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8	System Component Inventory	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CM-8	System Component Inventory	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CP-2(2)	Contingency Plan | Capacity Planning	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-2(2)	Contingency Plan | Capacity Planning	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(1)	Alternate Storage Site | Separation from Primary Site	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-6(1)	Alternate Storage Site | Separation from Primary Site	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6(2)	Alternate Storage Site | Recovery Time and Recovery Point Objectives	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-6	Alternate Storage Site	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-6	Alternate Storage Site	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
CP-9	System Backup	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
CP-9	System Backup	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CP-9	System Backup	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-9	System Backup	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
CP-10	System Recovery and Reconstitution	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
CP-10	System Recovery and Reconstitution	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
CP-10	System Recovery and Reconstitution	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
CP-10	System Recovery and Reconstitution	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Privileged Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Privileged Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Privileged Accounts	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(1)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Privileged Accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-2(2)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Non-privileged Accounts	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(2)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Non-privileged Accounts	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(2)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Non-privileged Accounts	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(2)	Identification and Authentication (organizational Users) | Multi-factor Authentication to Non-privileged Accounts	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-2(6)	Identification and Authentication (organizational Users) | Access to Accounts—separate Device	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(6)	Identification and Authentication (organizational Users) | Access to Accounts —separate Device	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(6)	Identification and Authentication (organizational Users) | Access to Accounts —separate Device	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(6)	Identification and Authentication (organizational Users) | Access to Accounts —separate Device	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-2(8)	Identification and Authentication (organizational Users) | Access to Accounts — Replay Resistant	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(8)	Identification and Authentication (organizational Users) | Access to Accounts — Replay Resistant	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(8)	Identification and Authentication (organizational Users) | Access to Accounts — Replay Resistant	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
IA-2(8)	Identification and Authentication (organizational Users) | Access to Accounts — Replay Resistant	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
IA-5(1)	Authenticator Management | Password-based Authentication	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)	Authenticator Management | Password-based Authentication	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
IA-5(1)	Authenticator Management | Password-based Authentication	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
IA-5(1)	Authenticator Management | Password-based Authentication	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)	Authenticator Management | Password-based Authentication	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
IA-5(1)	Authenticator Management | Password-based Authentication	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(1)	Authenticator Management | Password-based Authentication	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
IA-5(1)	Authenticator Management | Password-based Authentication	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
IA-5(7)	Authenticator Management | No Embedded Unencrypted Static Authenticators	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(1)	Incident Handling | Automated Incident Handling Processes	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
IR-4(5)	Incident Handling | Automatic Disabling of System	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
RA-3(4)	Risk Assessment | Predictive Cyber Analytics	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SA-3	System Development Life Cycle	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
SA-3	System Development Life Cycle	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-8(19)	Security and Privacy Engineering Principles | Continuous Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SA-8(21)	Security and Privacy Engineering Principles | Self-analysis	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-8(22)	Security and Privacy Engineering Principles | Accountability and Traceability	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SA-8(25)	Security and Privacy Engineering Principles | Economic Security	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-11(1)	Developer Testing and Evaluation | Static Code Analysis	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
SA-11(6)	Developer Testing and Evaluation | Attack Surface Reviews	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-15(2)	Development Process, Standards, and Tools | Security and Privacy Tracking Tools	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-15(2)	Development Process, Standards, and Tools | Security and Privacy Tracking Tools	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-15(8)	Development Process, Standards, and Tools | Reuse of Threat and Vulnerability Information	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SA-15(8)	Development Process, Standards, and Tools | Reuse of Threat and Vulnerability Information	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SC-5(1)	Denial-of-service Protection | Restrict Ability to Attack Other Systems	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(2)	Denial-of-service Protection | Capacity, Bandwidth, and Redundancy	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-5(3)	Denial-of-service Protection | Detection and Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
SC-5	Denial-of-service Protection	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7(3)	Boundary Protection | Access Points	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(3)	Boundary Protection | Access Points	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(3)	Boundary Protection | Access Points	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(3)	Boundary Protection | Access Points	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(3)	Boundary Protection | Access Points	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(3)	Boundary Protection | Access Points	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(3)	Boundary Protection | Access Points	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
SC-7(4)	Boundary Protection | External Telecommunications Services	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-7(4)	Boundary Protection | External Telecommunications Services	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-7(4)	Boundary Protection | External Telecommunications Services	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-7(4)	Boundary Protection | External Telecommunications Services	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7(4)	Boundary Protection | External Telecommunications Services	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
SC-7(4)	Boundary Protection | External Telecommunications Services	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
SC-7(4)	Boundary Protection | External Telecommunications Services	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-7(4)	Boundary Protection | External Telecommunications Services	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(4)	Boundary Protection | External Telecommunications Services	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(4)	Boundary Protection | External Telecommunications Services	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
SC-7(4)	Boundary Protection | External Telecommunications Services	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommu nications Services	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(4)	Boundary Protection | External Telecommunications Services	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(4)	Boundary Protection | External Telecommunications Services	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
SC-7(4)	Boundary Protection | External Telecommunications Services	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(4)	Boundary Protection | External Telecommunications Services	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	Boundary Protection | Deny by Default — Allow by Exception	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	Boundary Protection | Deny by Default — Allow by Exception	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	Boundary Protection | Deny by Default — Allow by Exception	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(5)	Boundary Protection | Deny by Default — Allow by Exception	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
SC-7(9)	Boundary Protection | Restrict Threatening Outgoing Communications Traffic	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC-7(10)	Boundary Protection | Prevent Exfiltration	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SC-7(10)	Boundary Protection | Prevent Exfiltration	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-7(10)	Boundary Protection | Prevent Exfiltration	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SC-7(10)	Boundary Protection | Prevent Exfiltration	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.
SC-7(10)	Boundary Protection | Prevent Exfiltration	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
SC-7(10)	Boundary Protection | Prevent Exfiltration	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
SC-7(10)	Boundary Protection | Prevent Exfiltration	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-7(10)	Boundary Protection | Prevent Exfiltration	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(10)	Boundary Protection | Prevent Exfiltration	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
SC-7(10)	Boundary Protection | Prevent Exfiltration	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protectio n | Restrict Incoming Communications Traffic	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protectio n | Restrict Incoming Communications Traffic	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protectio n | Restrict Incoming Communications Traffic	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(11)	Boundary Protection | Restrict Incoming Communications Traffic	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(16)	Boundary Protection | Prevent Discovery of System Components	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
SC-7(21)	Boundary Protection | Isolation of System Components	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-7(21)	Boundary Protection | Isolation of System Components	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7(21)	Boundary Protection | Isolation of System Components	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7(21)	Boundary Protection | Isolation of System Components	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7(21)	Boundary Protection | Isolation of System Components	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7(21)	Boundary Protection | Isolation of System Components	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7(21)	Boundary Protection | Isolation of System Components	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7(21)	Boundary Protection | Isolation of System Components	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7(21)	Boundary Protection | Isolation of System Components	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
SC-7	Boundary Protection	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
SC-7	Boundary Protection	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
SC-7	Boundary Protection	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
SC-7	Boundary Protection	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
SC-7	Boundary Protection	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
SC-7	Boundary Protection	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
SC-7	Boundary Protection	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
SC-7	Boundary Protection	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-7	Boundary Protection	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(1)	Transmission Confidentiality and Integrity | Cryptographic Protection	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8(2)	Transmission Confidentiality and Integrity | Pre- and Post-transmission Handling	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	Transmission Confidentiality and Integrity	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	Transmission Confidentiality and Integrity	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	Transmission Confidentiality and Integrity	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	Transmission Confidentiality and Integrity	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	Transmission Confidentiality and Integrity	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	Transmission Confidentiality and Integrity	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	Transmission Confidentiality and Integrity	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
SC-8	Transmission Confidentiality and Integrity	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-8	Transmission Confidentiality and Integrity	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-8	Transmission Confidentiality and Integrity	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-12(2)	Cryptographic Key Establishment and Management | Symmetric Keys	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12(2)	Cryptographic Key Establishment and Management | Symmetric Keys	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12(3)	Cryptographic Key Establishment and Management | Asymmetric Keys	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-12	Cryptographic Key Establishment and Management	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
SC-12	Cryptographic Key Establishment and Management	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
SC-13	Cryptographic Protection	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SC-13	Cryptographic Protection	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-13	Cryptographic Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
SC-13	Cryptographic Protection	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
SC-13	Cryptographic Protection	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-13	Cryptographic Protection	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-13	Cryptographic Protection	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-13	Cryptographic Protection	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-13	Cryptographic Protection	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC-13	Cryptographic Protection	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-13	Cryptographic Protection	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-13	Cryptographic Protection	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-13	Cryptographic Protection	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
SC-13	Cryptographic Protection	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-13	Cryptographic Protection	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
SC-13	Cryptographic Protection	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-13	Cryptographic Protection	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-13	Cryptographic Protection	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(3)	Session Authenticity | Unique System-generated Session Identifiers	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23(5)	Session Authenticity | Allowed Certificate Authorities	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23(5)	Session Authenticity | Allowed Certificate Authorities	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-23	Session Authenticity	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	Session Authenticity	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	Session Authenticity	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	Session Authenticity	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-23	Session Authenticity	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	Session Authenticity	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
SC-23	Session Authenticity	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	Session Authenticity	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SC-23	Session Authenticity	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-23	Session Authenticity	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-28(1)	Protection of Information at Rest | Cryptographic Protection	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28(3)	Protection of Information at Rest | Cryptographic Keys	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
SC-28(3)	Protection of Information at Rest | Cryptographic Keys	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
SC-28	Protection of Information at Rest	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SC-28	Protection of Information at Rest	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
SC-28	Protection of Information at Rest	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SC-28	Protection of Information at Rest	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SC-28	Protection of Information at Rest	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SC-28	Protection of Information at Rest	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SC-28	Protection of Information at Rest	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SC-28	Protection of Information at Rest	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SC-28	Protection of Information at Rest	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
SC-28	Protection of Information at Rest	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SC-28	Protection of Information at Rest	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-28	Protection of Information at Rest	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
SC-28	Protection of Information at Rest	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36(2)	Distributed Processing and Storage | Synchronization	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
SC-36	Distributed Processing and Storage	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	Distributed Processing and Storage	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	Distributed Processing and Storage	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SC-36	Distributed Processing and Storage	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	Flaw Remediation | Automated Flaw Remediation Status	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2(2)	Flaw Remediation | Automated Flaw Remediation Status	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(2)	Flaw Remediation | Automated Flaw Remediation Status	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(3)	Flaw Remediation | Time to Remediate Flaws and Benchmarks for Corrective Actions	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(3)	Flaw Remediation | Time to Remediate Flaws and Benchmarks for Corrective Actions	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(3)	Flaw Remediation | Time to Remediate Flaws and Benchmarks for Corrective Actions	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2(4)	Flaw Remediation | Automated Patch Management Tools	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(4)	Flaw Remediation | Automated Patch Management Tools	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(4)	Flaw Remediation | Automated Patch Management Tools	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(5)	Flaw Remediation | Automatic Software and Firmware Updates	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2(5)	Flaw Remediation | Automatic Software and Firmware Updates	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2(5)	Flaw Remediation | Automatic Software and Firmware Updates	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
SI-2	Flaw Remediation	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
SI-2	Flaw Remediation	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-3(8)	Malicious Code Protection | Detect Unauthorized Commands	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(1)	System Monitoring | System-wide Intrusion Detection System	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SI-4(2)	System Monitoring | Automated Tools and Mechanisms for Real-time Analysis	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(4)	System Monitoring | Inbound and Outbound Communications Traffic	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.
SI-4(4)	System Monitoring | Inbound and Outbound Communications Traffic	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	System Monitoring | System-generated Alerts	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(5)	System Monitoring | System-generated Alerts	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-4(5)	System Monitoring | System-generated Alerts	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(12)	System Monitoring | Automated Organization-generated Alerts	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(13)	System Monitoring | Analyze Traffic and Event Patterns	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
SI-4(20)	System Monitoring | Privileged Users	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
SI-4(20)	System Monitoring | Privileged Users	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
SI-4(20)	System Monitoring | Privileged Users	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(20)	System Monitoring | Privileged Users	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4(22)	System Monitoring | Unauthorized Network Services	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
SI-4(25)	System Monitoring | Optimize Network Traffic Analysis	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	System Monitoring	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	System Monitoring	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-4	System Monitoring	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(1)	Software, Firmware, and Information Integrity | Integrity Checks	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(3)	Software, Firmware, and Information Integrity | Centrally Managed Integrity Tools	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(6)	Software, Firmware, and Information Integrity | Cryptographic Protection	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(7)	Software, Firmware, and Information Integrity | Integration of Detection and Response	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
SI-7(8)	Software, Firmware, and Information Integrity | Auditing Capability for Significant Events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
SI-12	Information Management and Retention	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-12	Information Management and Retention	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
SI-13(5)	Predictable Failure Prevention | Failover Capability	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
SI-13(5)	Predictable Failure Prevention | Failover Capability	s3-version-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
SI-13(5)	Predictable Failure Prevention | Failover Capability	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
SI-13(5)	Predictable Failure Prevention | Failover Capability	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
SI-13(5)	Predictable Failure Prevention | Failover Capability	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
SI-20	Tainting	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
SI-20	Tainting	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
SI-20	Tainting	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Template

The template is available on GitHub: Operational Best Practices for NIST 800-53 rev 5.

Operational Best Practices for NIST 800 171

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates,

are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST 800-171 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NIST 800-171 controls. A NIST 800-171 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorized users, and devices (including other systems).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.1	Limit system access to authorized users, processes acting on behalf of authorize d users, and devices (including other systems).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.2	Limit system access to the types of transactions and functions that authorized users are permitted to execute.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.1.3	Control the flow of CUI in accordance with approved authorizations.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.1.3	Control the flow of CUI in accordance with approved authorizations.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3.1.3	Control the flow of CUI in accordance with approved authorizations.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordance with approved authorizations.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.1.3	Control the flow of CUI in accordance with approved authorizations.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3	Control the flow of CUI in accordanc e with approved authorizations.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.4	Separate the duties of individuals to reduce the risk of malevolent activity without collusion.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.5	Employ the principle of least privilege, including for specific security functions and privileged accounts.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.6	Use non-privileged accounts or roles when accessing nonsecurity functions .	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.7	Prevent non-privi leged users from executing privileged functions and audit the execution of such functions.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.7	Prevent non-privileged users from executing privileged functions and audit the execution of such functions.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
3.1.12	Monitor and control remote access sessions.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
3.1.12	Monitor and control remote access sessions.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
3.1.12	Monitor and control remote access sessions.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
3.1.12	Monitor and control remote access sessions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.12	Monitor and control remote access sessions.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.13	Employ cryptographic mechanisms to protect the confidentiality of remote access sessions.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.14	Route remote access from managed access control points.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.1.14	Route remote access from managed access control points.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.1.14	Route remote access from managed access control points.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3.1.14	Route remote access from managed access control points.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
3.1.14	Route remote access from managed access control points.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.1.14	Route remote access from managed access control points.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.1.14	Route remote access from managed access control points.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.14	Route remote access from managed access control points.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.1.20	Verify and control/limit connections to and use of external systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.1.20	Verify and control/limit connections to and use of external systems.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.20	Verify and control/limit connections to and use of external systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investiga tion, and reporting of unlawful, unauthori zed, or inappropriate system activity.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1	Create and retain system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate system activity.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individual system users can be uniquely traced to those users so they can be held accountable for their actions.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Ensure that the actions of individua l system users can be uniquely traced to those users so they can be held accountable for their actions.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.4	Alert in the event of an audit process failure.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.4	Alert in the event of an audit process failure.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.5	Correlate audit review, analysis, and reporting processes for investigation and response to indicatio ns of inappropriate, suspicious, or unusual activity.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.5	Correlate audit review, analysis, and reporting processes for investigation and response to indicatio ns of inappropriate, suspicious, or unusual activity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.3.8	Protect audit information and audit tools from unauthori zed access, modificat ion, and deletion.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.8	Protect audit information and audit tools from unauthorized access, modification, and deletion.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.1	Establish and maintain baseline configurations and inventories of organizational systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-managedinstanc e-association-comp liance-status-check	Use AWS Systems Manager Associati ons to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configura tion state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	ec2-volume-inuse-c heck	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminate d. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functionality by configuring organizational systems to provide only essential capabilities.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	opensearch-access-control-enabled	Ensure fine-grai ned access control is enabled on your Amazon OpenSearc h Service domains. Fine-grained access control provides enhanced authoriza tion mechanisms to achieve least-pri vileged access to Amazon OpenSearc h Service domains. It allows for role-base d access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-ten ancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-bucket-level-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.6	Employ the principle of least functiona lity by configuri ng organizational systems to provide only essential capabilities.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.4.7	Restrict, disable, and prevent the use of nonessent ial, functions, ports, protocols, or services.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.7	Restrict, disable, and prevent the use of nonessent ial, functions, ports, protocols, or services.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.7	Restrict, disable, and prevent the use of nonessent ial, functions, ports, protocols, or services.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.7	Restrict, disable, and prevent the use of nonessent ial, functions, ports, protocols, or services.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.9	Control and monitor user-installed software.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.9	Control and monitor user-installed software.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational systems.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2	Authenticate (or verify) the identitie s of those users, processes, or devices, as a prerequisite to allowing access to organizational systems.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2	Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational systems.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Use multifactor authentication for local and network access to privileged accounts and for network access to non-privileged accounts.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.5	Prevent reuse of identifiers for a defined period.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.6	Disable identifiers after a defined period of inactivity.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.7	Enforce a minimum password complexit y and change of characters when new passwords are created.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.8	Prohibit password reuse for a specified number of generatio ns.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
3.5.10	Store and transmit only cryptogra phically-protected passwords.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptographically-protected passwords.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
3.5.10	Store and transmit only cryptographically-protected passwords.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.5.10	Store and transmit only cryptographically-protected passwords.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptogra phically-protected passwords.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.5.10	Store and transmit only cryptogra phically-protected passwords.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptographically-protected passwords.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptographically-protected passwords.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptogra phically-protected passwords.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.5.10	Store and transmit only cryptogra phically-protected passwords.	s3-bucket-server-s ide-encryption-ena bled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.10	Store and transmit only cryptographically-protected passwords.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Establish an operational incident-handling capability for organizational systems that includes preparation, detection, analysis, containment, recovery, and user response activities.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Establish an operational incident-handling capabilit y for organizat ional systems that includes preparati on, detection, analysis, containme nt, recovery, and user response activities.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Establish an operational incident-handling capability for organizational systems that includes preparation, detection, analysis, containment, recovery, and user response activities.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Establish an operational incident-handling capabilit y for organizat ional systems that includes preparati on, detection, analysis, containme nt, recovery, and user response activities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting the system are identified.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.11.2	Scan for vulnerabilities in organizational systems and applications periodically and when new vulnerabilities affecting the system are identified.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.11.3	Remediate vulnerabilities in accordance with assessments of risk.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communica tions (i.e., informati on transmitted or received by organizat ional systems) at the external boundaries and key internal boundarie s of organizational systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.1	Monitor, control, and protect communications (i.e., information transmitted or received by organizational systems) at the external boundaries and key internal boundaries of organizational systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommend ed security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryptio n, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.13.2	Employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational systems.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.2	Employ architectural designs, software development techniques, and systems engineeri ng principles that promote effective information security within organizational systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.6	Deny network communications traffic by default and allow network communications traffic by exception (i.e., deny all, permit by exception).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.6	Deny network communications traffic by default and allow network communications traffic by exception (i.e., deny all, permit by exception).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.6	Deny network communications traffic by default and allow network communications traffic by exception (i.e., deny all, permit by exception).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.8	Implement cryptographic mechanisms to prevent unauthorized disclosure of CUI during transmission unless otherwise protected by alternative physical safeguards.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.13.10	Establish and manage cryptographic keys for cryptography employed in organizational systems.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.10	Establish and manage cryptographic keys for cryptography employed in organizational systems.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
3.13.16	Protect the confidentiality of CUI at rest.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
3.13.16	Protect the confidentiality of CUI at rest.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.
3.13.16	Protect the confidentiality of CUI at rest.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
3.13.16	Protect the confidentiality of CUI at rest.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
3.13.16	Protect the confidentiality of CUI at rest.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
3.13.16	Protect the confidentiality of CUI at rest.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
3.13.16	Protect the confidentiality of CUI at rest.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
3.13.16	Protect the confidentiality of CUI at rest.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
3.13.16	Protect the confidentiality of CUI at rest.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.16	Protect the confidentiality of CUI at rest.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
3.13.16	Protect the confidentiality of CUI at rest.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.1	Identify, report, and correct information and system flaws in a timely manner.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.1	Identify, report, and correct information and system flaws in a timely manner.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2	Provide protection from malicious code at appropriate locations within organizational systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2	Provide protection from malicious code at appropriate locations within organizational systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.3	Monitor system security alerts and advisories and take actions in response.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.3	Monitor system security alerts and advisories and take actions in response.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
3.14.3	Monitor system security alerts and advisories and take actions in response.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.3	Monitor system security alerts and advisories and take actions in response.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.3	Monitor system security alerts and advisories and take actions in response.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.4	Update malicious code protection mechanisms when new releases are available.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizat ional systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6	Monitor organizational systems, including inbound and outbound communications traffic, to detect attacks and indicators of potential attacks.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
3.14.7	Identify unauthorized use of organizational systems.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
3.14.7	Identify unauthorized use of organizational systems.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
3.14.7	Identify unauthorized use of organizational systems.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
3.14.7	Identify unauthorized use of organizational systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7	Identify unauthorized use of organizational systems.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Template

The template is available on GitHub: Operational Best Practices for NIST 800 171.

Operational Best Practices for NIST 800 172

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST 800-172 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NIST 800-172 controls. A NIST 800-172 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defin ed secure informati on transfer solutions] to control informat ion flows between security domains on connected systems.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	alb-desync-mode-check	To assist in protecting applications for HTTP Desync vulnerabilities, ensure HTTP Desync mitigation mode is enabled on your application load balancers. HTTP Desync issues can lead to request smuggling and make your applications vulnerable to request queue or cache poisoning. Desync mitigation modes are monitor, defensive, and strictest. Defensive is the default mode.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	clb-desync-mode-check	To assist in protecting applications for HTTP Desync vulnerabilities, ensure HTTP Desync mitigation mode is enabled on your application load balancers. HTTP Desync issues can lead to request smuggling and make your applications vulnerable to request queue or cache poisoning. Desync mitigation modes are monitor, defensive, and strictest. Defensive is the default mode.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	ec2-token-hop-limit-check	Ensure the Instance Metadata Service (IMDS) HTTP PUT response is restricted to the Amazon Elastic Compute Cloud (Amazon EC2) instance. With IMDSv2, the PUT response that contains the secret token by default cannot travel outside the instance, because the Metadata response hop limit is set to 1 (Config default). If this value is greater than 1, the token is able to leave the EC2 instance.
3.1.3e	Employ [Assignment: organization-defined secure information transfer solutions] to control information flows between security domains on connected systems.	nacl-no-unrestricted-ssh-rdp	Access to remote server administration ports in your Network Access Control Lists (NACLs), such as port 22 (SSH) and port 3389 (RDP), should not be publicly accessible, as this may allow unintended access to resources within your VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1e	Provide awareness training [Assignment: organization-defined frequency] focused on recognizing and responding to threats from social engineering, advanced persistent threat actors, breaches, and suspicious behaviors; update the training [Assignment: organization- defined frequency] or when there are significant changes to the threat.	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
3.4.2e	Employ automated mechanisms to detect misconfigured or unauthorized system components; after detection, [Selection (one or more): remove the components; place the components in a quarantine or remediation network] to facilitate patching, re-configuration, or other mitigations.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.2e	Employ automated mechanisms to detect misconfigured or unauthorized system components; after detection, [Selection (one or more): remove the components; place the components in a quarantine or remediation network] to facilitate patching, re-configuration, or other mitigations.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.2e	Employ automated mechanisms to detect misconfigured or unauthorized system components; after detection, [Selection (one or more): remove the components; place the components in a quarantine or remediation network] to facilitate patching, re-configuration, or other mitigations.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.2e	Employ automated mechanisms to detect misconfigured or unauthorized system components; after detection, [Selection (one or more): remove the components; place the components in a quarantine or remediation network] to facilitate patching, re-configuration, or other mitigations.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.3e	Employ automated discovery and management tools to maintain an up-to-date, complete, accurate, and readily available inventory of system components.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.3e	Employ automated discovery and management tools to maintain an up-to-date, complete, accurate, and readily available inventory of system components.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
3.4.3e	Employ automated discovery and management tools to maintain an up-to-date, complete, accurate, and readily available inventory of system components.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.4.3e	Employ automated discovery and management tools to maintain an up-to-date, complete, accurate, and readily available inventory of system components.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
3.4.3e	Employ automated discovery and management tools to maintain an up-to-date, complete, accurate, and readily available inventory of system components.	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2e	Employ automated mechanisms for the generation, protection, rotation, and managemen t of passwords for systems and system components that do not support multifact or authentication or complex account management.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
3.5.2e	Employ automated mechanisms for the generation, protection, rotation, and managemen t of passwords for systems and system components that do not support multifact or authentication or complex account management.	secretsmanager-rot ation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2e	Employ automated mechanisms for the generation, protection, rotation, and managemen t of passwords for systems and system components that do not support multifact or authentication or complex account management.	secretsmanager-sch eduled-rotation-su ccess-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
3.5.2e	Employ automated mechanisms for the generation, protection, rotation, and managemen t of passwords for systems and system components that do not support multifact or authentication or complex account management.	secretsmanager-sch eduled-rotation-su ccess-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
3.11.1e	Employ [Assignment: organization-defined sources of threat intelligence] as part of a risk assessment to guide and inform the development of organizational systems, security architectures, selection of security solutions, monitoring, threat hunting, and response and recovery activities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
3.11.2e	Conduct cyber threat hunting activities [Selection (one or more): [Assignment: organization-defined frequency]; [Assignment: organization-defined event]] to search for indicators of compromise in [Assignment: organization-defined systems] and detect, track, and disrupt threats that evade existing controls.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.11.5e	Assess the effectiveness of security solutions [Assignment: organization-defined frequency] to address anticipated risk to organizational systems and the organization based on current and accumulated threat intelligence.	annual-risk-assessment-performed (process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	nacl-no-unrestricted-ssh-rdp	Access to remote server administration ports in your Network Access Control Lists (NACLs), such as port 22 (SSH) and port 3389 (RDP), should not be publicly accessible, as this may allow unintended access to resources within your VPC.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selectio n: (one or more): [Assignment: organization-defined physical isolation techniqu es]; [Assignment: organization-defin ed logical isolation techniques]] in organizational systems and system components.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.13.4e	Employ [Selection: (one or more): [Assignment: organization-defined physical isolation techniques]; [Assignment: organization-defined logical isolation techniques]] in organizational systems and system components.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.1e	Verify the integrity of [Assignment: organization-defined security critical or essential software] using root of trust mechanisms or cryptographic signatures.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizat ional systems and system components on an ongoing basis for anomalous or suspicious behavior.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.14.2e	Monitor organizat ional systems and system components on an ongoing basis for anomalous or suspicious behavior.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizational systems and system components on an ongoing basis for anomalous or suspicious behavior.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizational systems and system components on an ongoing basis for anomalous or suspicious behavior.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizational systems and system components on an ongoing basis for anomalous or suspicious behavior.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizational systems and system components on an ongoing basis for anomalous or suspicious behavior.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.2e	Monitor organizational systems and system components on an ongoing basis for anomalous or suspicious behavior.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.6e	Use threat indicator information and effective mitigatio ns obtained from [Assignment: organization-defined external organizat ions] to guide and inform intrusion detection and threat hunting.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7e	Verify the correctness of [Assignment: organization-defined security critical or essential software, firmware, and hardware components] using [Assignment: organization-defined verification methods or techniques].	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7e	Verify the correctness of [Assignment: organization-defined security critical or essential software, firmware, and hardware components] using [Assignment: organization-defined verification methods or techniques].	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7e	Verify the correctness of [Assignment: organization-defined security critical or essential software, firmware, and hardware components] using [Assignment: organization-defined verification methods or techniques].	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7e	Verify the correctness of [Assignment: organization-defined security critical or essential software, firmware, and hardware components] using [Assignment: organization-defined verification methods or techniques].	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatically for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
3.14.7e	Verify the correctness of [Assignment: organization-defined security critical or essential software, firmware, and hardware components] using [Assignment: organization-defined verification methods or techniques].	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Template

The template is available on GitHub: Operational Best Practices for NIST 800 172.

Operational Best Practices for NIST 800 181

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST 800 181 and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more NIST 800 181 controls. A NIST 800 181 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
T0008	Analyze and plan for anticipated changes in data capacity requirements.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business

Control ID	Control Description	AWS Config Rule	Guidance
			and regulatory backup compliance requirements.
T0008	Analyze and plan for anticipated changes in data capacity requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0008	Analyze and plan for anticipated changes in data capacity requirements.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elasticsearch Service (Amazon ES) domains.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0017	Apply service-oriented security architecture principles to meet organization's confidentiality, integrity, and availability requirements.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
T0024	Collect and maintain data needed to meet system cybersecurity reporting.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
T0042	Coordinate with Cyber Defense Analysts to manage and administer the updating of rules and signatures (for example, intrusion detection/protection systems, antivirus, and content blacklists) for specialized cyber defense applications.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
T0047	Correlate incident data to identify specific vulnerabilities and make recommendations that enable expeditious remediation.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	dynamodb-autoscali ng-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/writ e capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	rds-instance-delet ion-protection-ena bled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropria te levels of system availability based on critical system functions and ensure that system requirements identify appropria te disaster recovery and continuity of operations requireme nts to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportab ility requirements for system recover/r estoration.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0051	Define appropriate levels of system availability based on critical system functions and ensure that system requirements identify appropriate disaster recovery and continuity of operations requirements to include any appropriate fail-over/alternate site requirements, backup requirements, and material supportability requirements for system recover/restoration.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
T0065	Develop and implement network backup and recovery procedures.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
T0065	Develop and implement network backup and recovery procedures.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
T0065	Develop and implement network backup and recovery procedures.	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0065	Develop and implement network backup and recovery procedures.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
T0065	Develop and implement network backup and recovery procedures.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
T0070	Develop Disaster Recovery and Continuity of Operations plans for systems under development and ensure testing prior to systems entering a production environment.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0086	Ensure that the application of security patches for commercial products integrated into system design meet the timelines dictated by the managemen t authority for the intended operational environment.	rds-automatic-mino r-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.
T0086	Ensure that the application of security patches for commercial products integrated into system design meet the timelines dictated by the managemen t authority for the intended operational environment.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
T0086	Ensure that the application of security patches for commercial products integrated into system design meet the timelines dictated by the managemen t authority for the intended operational environment.	elastic-beanstalk-managed-updates-en abled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0086	Ensure that the application of security patches for commercial products integrated into system design meet the timelines dictated by the managemen t authority for the intended operational environment.	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0110	Identify and/or determine whether a security incident is indicative of a violation of law that requires specific legal action.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0110	Identify and/or determine whether a security incident is indicative of a violation of law that requires specific legal action.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0110	Identify and/or determine whether a security incident is indicative of a violation of law that requires specific legal action.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
T0128	Integrate automated capabilities for updating or patching system software where practical and develop processes and procedures for manual updating and patching of system software based on current and projected patch timeline requirements for the operational environment of the system.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
T0128	Integrate automated capabilities for updating or patching system software where practical and develop processes and procedures for manual updating and patching of system software based on current and projected patch timeline requirements for the operational environment of the system.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
T0128	Integrate automated capabilities for updating or patching system software where practical and develop processes and procedures for manual updating and patching of system software based on current and projected patch timeline requirements for the operational environment of the system.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0128	Integrate automated capabilities for updating or patching system software where practical and develop processes and procedures for manual updating and patching of system software based on current and projected patch timeline requirements for the operational environment of the system.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
T0144	Manage accounts, network rights, and access to systems and equipment.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
T0144	Manage accounts, network rights, and access to systems and equipment.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
T0144	Manage accounts, network rights, and access to systems and equipment.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
T0144	Manage accounts, network rights, and access to systems and equipment.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
T0144	Manage accounts, network rights, and access to systems and equipment.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
T0144	Manage accounts, network rights, and access to systems and equipment.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
T0144	Manage accounts, network rights, and access to systems and equipment.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0144	Manage accounts, network rights, and access to systems and equipment.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0144	Manage accounts, network rights, and access to systems and equipment.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0144	Manage accounts, network rights, and access to systems and equipment.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
T0144	Manage accounts, network rights, and access to systems and equipment.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
T0144	Manage accounts, network rights, and access to systems and equipment.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0151	Monitor and evaluate the effectiveness of the enterpris e's cybersecurity safeguards to ensure that they provide the intended level of protection.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0151	Monitor and evaluate the effectiveness of the enterpris e's cybersecurity safeguards to ensure that they provide the intended level of protection.	cloudwatch-alarm-a ction-check	Amazon CloudWatc h alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequire d (Config Default: True), insuffici entDataActionRequi red (Config Default: True), okActionR equired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0151	Monitor and evaluate the effectiveness of the enterpris e's cybersecurity safeguards to ensure that they provide the intended level of protection.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
T0152	Monitor and maintain databases to ensure optimal performance.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
T0152	Monitor and maintain databases to ensure optimal performance.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
T0152	Monitor and maintain databases to ensure optimal performance.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0152	Monitor and maintain databases to ensure optimal performance.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
T0152	Monitor and maintain databases to ensure optimal performance.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0153	Monitor network capacity and performance.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
T0153	Monitor network capacity and performance.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0153	Monitor network capacity and performance.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
T0153	Monitor network capacity and performance.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
T0154	Monitor and report the usage of knowledge management assets and resources.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
T0154	Monitor and report the usage of knowledge management assets and resources.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
T0154	Monitor and report the usage of knowledge management assets and resources.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
T0154	Monitor and report the usage of knowledge management assets and resources.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
T0154	Monitor and report the usage of knowledge management assets and resources.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
T0154	Monitor and report the usage of knowledge management assets and resources.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
T0154	Monitor and report the usage of knowledge management assets and resources.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
T0156	Oversee and make recommendations regarding configuration management.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configuration management.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configuration management.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configuration management.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configuration management.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configuration management.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configura tion management.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configura tion management.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0156	Oversee and make recommendations regarding configura tion management.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0160	Patch network vulnerabilities to ensure that informati on is safeguarded against outside parties.	rds-automatic-mino r-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
T0160	Patch network vulnerabilities to ensure that informati on is safeguarded against outside parties.	ec2-managedinstanc e-association-comp liance-status-check	Use AWS Systems Manager Associati ons to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configura tion state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0160	Patch network vulnerabilities to ensure that informati on is safeguarded against outside parties.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
T0162	Perform backup and recovery of databases to ensure data integrity.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
T0162	Perform backup and recovery of databases to ensure data integrity.	dynamodb-pitr-enabled	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0162	Perform backup and recovery of databases to ensure data integrity.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
T0162	Perform backup and recovery of databases to ensure data integrity.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
T0166	Perform event correlation using information gathered from a variety of sources within the enterprise to gain situational awareness and determine the effectiveness of an observed attack.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
T0168	Perform hash comparison against established database.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requirements.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0195	Provide a managed flow of relevant information (via web-based portals or other means) based on mission requireme nts.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0215	Recognize a possible security violation and take appropriate action to report the incident, as required.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0244	Verify that applicati on software/ network/system security postures are implemented as stated, document deviations, and recommend required actions to correct those deviations.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
T0244	Verify that application software/network/system security postures are implemented as stated, document deviations, and recommend required actions to correct those deviations.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0244	Verify that application software/network/system security postures are implemented as stated, document deviations, and recommend required actions to correct those deviations.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0258	Provide timely detection, identification, and alerting of possible attacks/intrusions, anomalous activities, and misuse activities and distinguish these incidents and events from benign activities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
T0259	Use cyber defense tools for continual monitoring and analysis of system activity to identify malicious activity.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0262	Employ approved defense-in-depth principles and practices (for example, defense-in-multiple places, layered defenses, security robustness).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
T0284	Design and develop new tools/technologies as related to cybersecurity.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
T0284	Design and develop new tools/technologies as related to cybersecurity.	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrai l log file validation to check the integrity of CloudTrail logs. Log file validatio n helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithm s: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
T0284	Design and develop new tools/technologies as related to cybersecurity.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
T0284	Design and develop new tools/technologies as related to cybersecurity.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/technologies as related to cybersecurity.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0284	Design and develop new tools/technologies as related to cybersecurity.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0284	Design and develop new tools/tec hnologies as related to cybersecurity.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0306	Supports incident managemen t, service-level management, change management, release managemen t, continuity management, and availability management for databases and data management systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0306	Supports incident managemen t, service-level management, change management, release managemen t, continuity management, and availability management for databases and data management systems.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0306	Supports incident managemen t, service-level management, change management, release managemen t, continuity management, and availability management for databases and data management systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecurity requirements.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecurity requirements.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecurity requirements.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecurity requirements.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecurity requirements.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
T0314	Develop a system security context, a preliminary system security Concept of Operations (CONOPS), and define baseline system security requirements in accordance with applicable cybersecu rity requirements.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0333	Perform cyber defense trend analysis and reporting.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0333	Perform cyber defense trend analysis and reporting.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
T0347	Assess the validity of source data and subsequent findings.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.
T0358	Design and develop system administration and managemen t functionality for privileged access users.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
T0376	Establish, resource, implement , and assess cyber workforce managemen t programs in accordance with organizational requirements.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0416	Enable applications with public keying by leveraging existing public key infrastru cture (PKI) libraries and incorpora ting certificate management and encryption functiona lities when appropria te.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0416	Enable applications with public keying by leveraging existing public key infrastru cture (PKI) libraries and incorpora ting certificate management and encryption functiona lities when appropria te.	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0416	Enable applications with public keying by leveraging existing public key infrastru cture (PKI) libraries and incorpora ting certificate management and encryption functiona lities when appropria te.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
T0416	Enable applications with public keying by leveraging existing public key infrastru cture (PKI) libraries and incorpora ting certificate management and encryption functiona lities when appropria te.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0416	Enable applications with public keying by leveraging existing public key infrastructure (PKI) libraries and incorporating certificate management and encryption functionalities when appropriate.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/ cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
T0421	Manage the indexing/ cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (for example, hard copy documents, digital files).	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
T0475	Assess adequate access controls based on principles of least privilege and need-to-know.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
T0489	Implement system security measures in accordance with established procedures to ensure confidentiality, integrity, availability, authentication, and non-repudiation.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
T0491	Install and configure hardware, software, and periphera l equipment for system users in accordance with organizational standards.	ec2-instance-manag ed-by-systems-mana ger	An inventory of the software platforms and applications within the organizat ion is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installat ions, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0491	Install and configure hardware, software, and periphera l equipment for system users in accordance with organizational standards.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0491	Install and configure hardware, software, and periphera l equipment for system users in accordance with organizational standards.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.
T0503	Monitor external data sources (for example, cyber defense vendor sites, Computer Emergency Response Teams, Security Focus) to maintain currency of cyber defense threat condition and determine which security issues may have an impact on the enterprise.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0509	Perform an informati on security risk assessment.	annual-risk-assess ment-performed (process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determini ng the likelihood and impact of identified risks and/or vulnerabi lities affecting an organization.
T0553	Apply cybersecu rity functions (for example, encryptio n, access control, and identity managemen t) to reduce exploitat ion opportunities.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon Elasticsearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elasticsearch Service (Amazon ES) domains.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon Elasticsearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elasticsearch Service (Amazon ES) domains.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
T0553	Apply cybersecurity functions (for example, encryption, access control, and identity management) to reduce exploitation opportunities.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
T0557	Integrate key management functions as related to cyberspace.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated once they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
T0557	Integrate key management functions as related to cyberspace.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
T0576	Assess all-source intelligence and recommend targets to support cyber operation objectives.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.
T0609	Conduct access enabling of wireless computer and digital networks.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
T0609	Conduct access enabling of wireless computer and digital networks.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
T0609	Conduct access enabling of wireless computer and digital networks.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.
T0609	Conduct access enabling of wireless computer and digital networks.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
T0609	Conduct access enabling of wireless computer and digital networks.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
T0609	Conduct access enabling of wireless computer and digital networks.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
T0609	Conduct access enabling of wireless computer and digital networks.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
T0609	Conduct access enabling of wireless computer and digital networks.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon Elasticsearch Service (Amazon ES) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon ES domain within an Amazon VPC enables secure communication between Amazon ES and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
T0609	Conduct access enabling of wireless computer and digital networks.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
T0616	Conduct network scouting and vulnerability analyses of systems within a network.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0686	Identify threat vulnerabilities.	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
T0686	Identify threat vulnerabilities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	elasticsearch-logs-to-cloudwatch	Ensure Amazon Elasticsearch service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	lambda-concurrency-check	This rule ensures that a Lambda function' s concurrency high and low limits are established. This can assist in baselinin g the number of requests that your function is serving at any given time.
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	multi-region-cloud trail-enabled	AWS CloudTrai l records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REG ION_CLOUD _TRAIL_ENABLED is enabled. Additiona lly, when AWS launches a new Region, CloudTrai l will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	beanstalk-enhanced -health-reporting- enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastru cture. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	cloud-trail-cloud- watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	dynamodb-throughput-limit-check	Enable this rule to ensure that provision ed throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughpu t requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionall y set accountRC UThresholdPercenta ge (Config Default: 80) and accountWC UThresholdPercenta ge (Config Default: 80) parameters. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	redshift-cluster-c onfiguration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configura tions are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather informati on about networks through tradition al and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
T0706	Gather information about networks through traditional and alternative techniques, (for example, social network analysis, call-chaining, traffic analysis.)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
T0777	Profile network or system administrators and their activities.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0805	Report intelligence-derived significant network events and intrusions.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
T0877	Work cooperati vely with applicable organization units in overseeing consumer information access rights	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperati vely with applicable organization units in overseeing consumer information access rights	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
T0877	Work cooperatively with applicable organization units in overseeing consumer information access rights	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0877	Work cooperati vely with applicable organization units in overseeing consumer information access rights	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0935	Perform an informati on security risk assessment.	annual-risk-assess ment-performed (process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determini ng the likelihood and impact of identified risks and/or vulnerabi lities affecting an organization.
T0960	Monitor changes to a system and its environment of operation.	lambda-concurrency-check	This rule ensures that a Lambda function' s concurrency high and low limits are established. This can assist in baselinin g the number of requests that your function is serving at any given time.
T0960	Monitor changes to a system and its environment of operation.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0960	Monitor changes to a system and its environment of operation.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitorin g results will be used in ongoing authoriza tion.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitorin g results will be used in ongoing authoriza tion.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitorin g results will be used in ongoing authoriza tion.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
T0992	Determine how the continuous monitoring results will be used in ongoing authorization.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEnc ryptFrom). The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
T0993	Establish continuous monitoring tools and technologies access control process and procedures.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Template

The template is available on GitHub: Operational Best Practices for NIST 800 181.

Operational Best Practices for NIST 1800 25

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between NIST 1800-25 and AWS managed Config rules. Each AWS Config applies to a specific AWS resource,and relates to one or more NIST 1800-25 controls. A NIST 1800-25 control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organization are inventoried	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
ID.AM-2	Software platforms and applications within the organization are inventoried	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your

Control ID	Control Description	AWS Config Rule	Guidance
			managed instances and allows you to set baselines of operating system patch levels, software installations, application configura tions, and other details about your environment.
ID.AM-2	Software platforms and applications within the organizat ion are inventoried	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organizat ion are inventoried	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
ID.AM-2	Software platforms and applications within the organizat ion are inventoried	vpc-network-acl-un used-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-1	Asset vulnerabilities are identified and documented	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
ID.RA-1	Asset vulnerabilities are identified and documented	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-1	Asset vulnerabilities are identified and documented	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
ID.RA-1	Asset vulnerabilities are identified and documented	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.
PR.AC-3	Remote access is managed.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.AC-3	Remote access is managed.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-3	Remote access is managed.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.AC-3	Remote access is managed.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-3	Remote access is managed.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-3	Remote access is managed.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
PR.AC-3	Remote access is managed.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-3	Remote access is managed.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	autoscaling-launch -config-public-ip- disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-policy-no-stat ements-with-full-a ccess	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
PR.DS-1	Data-at-rest is protected	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
PR.DS-1	Data-at-rest is protected	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
PR.DS-1	Data-at-rest is protected	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
PR.DS-2	Data-in-transit is protected	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-6	Integrity checking mechanisms are used to verify software, firmware, and information integrity	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-6	Integrity checking mechanisms are used to verify software, firmware, and information integrity	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
PR.IP-1	A baseline configura tion of informati on technology/ industrial control systems is created and maintaine d incorporating security principles (for example concept of least functionality)	account-part-of-or ganizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsist ent account configura tions, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-3	Configuration change control processes are in place	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
PR.IP-3	Configuration change control processes are in place	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
PR.IP-4	Backups of informati on are conducted , maintained, and tested	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.IP-4	Backups of informati on are conducted , maintained, and tested	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-9	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are in place and managed.	response-plan-exists-maintained (Process Check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel . Having updated and formally documente d response plans can assist in making sure response personnel understand roles, responsibilities and processes to be followed during an incident.
PR.IP-10	Response and recovery plans are tested.	response-plan-tested (Process Check)	Ensure Incident response and recovery plans are tested. This can assist in understanding if your plan will be effective during an incident and if any gaps or updates need to be addressed.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented.	vuln-management-plan-exists (Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment. This can include vulnerability management tools, environmental scanning cadence, roles and responsibilities.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.MA-2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
PR.MA-2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Communications and control networks are protected	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
PR.PT-4	Communications and control networks are protected	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.PT-4	Communications and control networks are protected	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
PR.PT-4	Communications and control networks are protected	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-4	Communications and control networks are protected	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.PT-4	Communications and control networks are protected	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
DE.CM-8	Vulnerability scans are performed.	vuln-scans-performed (Process Check)	Ensure vulnerability scans are performed according to your compliance requirements. The cadence of scanning, tools used, and use of results should be defined by your organization.

Control ID	Control Description	AWS Config Rule	Guidance
RS.MI-3	Newly identifie d vulnerabilities are mitigated or documented as accepted risks.	vuln-mitigated-acc epted (Process Check)	Ensure newly identified vulnerabi lities are remediate d or documented as accepted risks. Services such as AWS Security Hub, Amazon Guard Duty, Amazon Inspector, and AWS Config can assist in identifying vulnerabilities within your environme nt. Vulnerabilities should be remediate d or accepted as risks according to your organizat ions compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.MI-3	Newly identified vulnerabilities are mitigated or documented as accepted risks	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Template

The template is available on GitHub: Operational Best Practices for NIST 1800 25.

Operational Best Practices for NIST CSF

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST Cyber Security Framework (CSF) and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more NIST CSF controls. A NIST CSF control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS

Control ID	Control Description	AWS Config Rule	Guidance
			Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-1	A baseline of network operations and expected data flows for users and systems is established and managed	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-2	Detected events are analyzed to understand attack targets and methods	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-2	Detected events are analyzed to understand attack targets and methods	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environme nt. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains informati on such as the time the request was received, the client's IP address, latencies , request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-3	Event data are collected and correlated from multiple sources and sensors	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
DE.AE-4	Impact of events is determined	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
DE.AE-4	Impact of events is determined	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.AE-4	Impact of events is determined	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
DE.CM-1	The network is monitored to detect potential cybersecurity events	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecurity events	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DE.CM-1	The network is monitored to detect potential cybersecurity events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecurity events	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
DE.CM-1	The network is monitored to detect potential cybersecurity events	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecurity events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecu rity events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecurity events	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecu rity events	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-1	The network is monitored to detect potential cybersecurity events	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
DE.CM-3	Personnel activity is monitored to detect potential cybersecurity events	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-3	Personnel activity is monitored to detect potential cybersecurity events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
DE.CM-3	Personnel activity is monitored to detect potential cybersecurity events	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-3	Personnel activity is monitored to detect potential cybersecurity events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-3	Personnel activity is monitored to detect potential cybersecu rity events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-3	Personnel activity is monitored to detect potential cybersecu rity events	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-4	Malicious code is detected	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-4	Malicious code is detected	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
DE.CM-5	Unauthorized mobile code is detected	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-5	Unauthorized mobile code is detected	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
DE.CM-5	Unauthorized mobile code is detected	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-5	Unauthorized mobile code is detected	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-5	Unauthorized mobile code is detected	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-5	Unauthorized mobile code is detected	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-6	External service provider activity is monitored to detect potential cybersecurity events	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DE.CM-6	External service provider activity is monitored to detect potential cybersecurity events	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-6	External service provider activity is monitored to detect potential cybersecu rity events	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-6	External service provider activity is monitored to detect potential cybersecurity events	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-6	External service provider activity is monitored to detect potential cybersecu rity events	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-6	External service provider activity is monitored to detect potential cybersecurity events	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
DE.CM-7	Monitoring for unauthorized personnel, connections, devices, and software is performed	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
DE.DP-4	Event detection information is communicated	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-4	Event detection information is communicated	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
DE.DP-4	Event detection information is communicated	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-4	Event detection information is communicated	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-4	Event detection information is communicated	s3-event-notifications-enabled	Amazon S3 event notifications can alert relevant personnel of any accidental or intentional modifications on your bucket objects. Example alerts include: new object is creation, object removal, object restoration, lost and replicated objects.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-4	Event detection information is communicated	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-4	Event detection information is communicated	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
DE.DP-5	Detection processes are continuously improved	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organization are inventoried	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organization are inventoried	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organizat ion are inventoried	ec2-stopped-instance	Enable this rule to help with the baseline configura tion of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
ID.AM-2	Software platforms and applications within the organizat ion are inventoried	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-2	Software platforms and applications within the organization are inventoried	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.
ID.AM-3	Organizational communication and data flows are mapped	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
ID.AM-3	Organizational communication and data flows are mapped	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
ID.BE-5	Resilience requirements to support delivery of critical services are established for all operating states (for example under duress/attack, during recovery, normal operations)	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-1	Asset vulnerabilities are identified and documented	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
ID.RA-1	Asset vulnerabilities are identified and documented	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-1	Asset vulnerabilities are identified and documented	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.
ID.RA-1	Asset vulnerabilities are identified and documented	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-2	Cyber threat intelligence is received from information sharing forums and sources	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
ID.RA-3	Threats, both internal and external, are identified and documented	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-3	Threats, both internal and external, are identified and documented	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
ID.RA-5	Threats, vulnerabilities, likelihoods, and impacts are used to determine risk	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-5	Threats, vulnerabilities, likelihoods, and impacts are used to determine risk	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-5	Threats, vulnerabilities, likelihoods, and impacts are used to determine risk	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
ID.RA-5	Threats, vulnerabilities, likelihoods, and impacts are used to determine risk	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
ID.SC-4	Suppliers and third-party partners are routinely assessed using audits, test results, or other forms of evaluations to confirm they are meeting their contractual obligations.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
ID.SC-4	Suppliers and third-party partners are routinely assessed using audits, test results, or other forms of evaluatio ns to confirm they are meeting their contractual obligatio ns.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
ID.SC-4	Suppliers and third-party partners are routinely assessed using audits, test results, or other forms of evaluations to confirm they are meeting their contractual obligations.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
ID.SC-4	Suppliers and third-party partners are routinely assessed using audits, test results, or other forms of evaluatio ns to confirm they are meeting their contractual obligatio ns.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users and processes	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-1	Identities and credentials are issued, managed, verified, revoked, and audited for authorize d devices, users and processes	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
PR.AC-3	Remote access is managed.	autoscaling-launch -config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.AC-3	Remote access is managed.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-3	Remote access is managed.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.AC-3	Remote access is managed.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-3	Remote access is managed.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-3	Remote access is managed.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-3	Remote access is managed.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-3	Remote access is managed.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-3	Remote access is managed.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-5	Network integrity is protected (for example, network segregation, network segmentation)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-6	Identities are proofed and bound to credentials and asserted in interactions	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-6	Identities are proofed and bound to credentials and asserted in interacti ons	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-7	Users, devices, and other assets are authenticated (for example, single-factor, multi-fac tor) commensur ate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
PR.AC-7	Users, devices, and other assets are authenticated (for example, single-factor, multi-fac tor) commensur ate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks)	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-7	Users, devices, and other assets are authenticated (for example, single-factor, multi-factor) commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-7	Users, devices, and other assets are authenticated (for example, single-factor, multi-factor) commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-7	Users, devices, and other assets are authenticated (for example, single-factor, multi-factor) commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
PR.AT-1	All users are informed and trained	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
PR.DS-1	Data-at-rest is protected	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
PR.DS-1	Data-at-rest is protected	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
PR.DS-1	Data-at-rest is protected	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-1	Data-at-rest is protected	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
PR.DS-1	Data-at-rest is protected	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-2	Data-in-transit is protected	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
PR.DS-2	Data-in-transit is protected	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-2	Data-in-transit is protected	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-3	Assets are formally managed throughout removal, transfers, and disposition	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-3	Assets are formally managed throughout removal, transfers, and disposition	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-3	Assets are formally managed throughout removal, transfers, and disposition	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.
PR.DS-4	Adequate capacity to ensure availability is maintained	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
PR.DS-4	Adequate capacity to ensure availability is maintained	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
PR.DS-4	Adequate capacity to ensure availability is maintained	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
PR.DS-4	Adequate capacity to ensure availability is maintained	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.DS-4	Adequate capacity to ensure availability is maintained	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-4	Adequate capacity to ensure availability is maintained	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.DS-5	Protections against data leaks are implemented	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
PR.DS-5	Protections against data leaks are implemented	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.
PR.DS-5	Protections against data leaks are implemented	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.
PR.DS-5	Protections against data leaks are implemented	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.DS-5	Protections against data leaks are implemented	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.DS-5	Protections against data leaks are implemented	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-5	Protections against data leaks are implemented	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.DS-5	Protections against data leaks are implemented	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-6	Integrity checking mechanisms are used to verify software, firmware, and information integrity	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-6	Integrity checking mechanisms are used to verify software, firmware, and information integrity	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-7	The development and testing environment(s) are separate from the production environment	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-7	The development and testing environment(s) are separate from the production environment	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-7	The development and testing environment(s) are separate from the production environment	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
PR.DS-7	The development and testing environment(s) are separate from the production environment	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-7	The development and testing environment(s) are separate from the production environment	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-7	The development and testing environme nt(s) are separate from the production environment	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-1	A baseline configuration of information technology/industrial control systems is created and maintained incorporating security principles (for example concept of least functionality)	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-2	A System Development Life Cycle to manage systems is implemented	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
PR.IP-2	A System Development Life Cycle to manage systems is implemented	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositories.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-2	A System Development Life Cycle to manage systems is implemented	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-3	Configuration change control processes are in place	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
PR.IP-3	Configuration change control processes are in place	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.
PR.IP-4	Backups of informati on are conducted , maintained, and tested	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-4	Backups of informati on are conducted , maintained, and tested	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.IP-4	Backups of informati on are conducted , maintained, and tested	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-7	Protection processes are improved	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
PR.IP-8	Effectiveness of protection technologies is shared	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.IP-8	Effectiveness of protection technologies is shared	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.IP-8	Effectiveness of protection technologies is shared	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.IP-8	Effectiveness of protection technologies is shared	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
PR.IP-8	Effectiveness of protection technologies is shared	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.IP-8	Effectiveness of protection technologies is shared	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-8	Effectiveness of protection technologies is shared	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.IP-12	A vulnerability management plan is developed and implemented	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.MA-2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
PR.MA-2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Communications and control networks are protected	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-1	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.PT-3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.PT-4	Communications and control networks are protected	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
PR.PT-4	Communications and control networks are protected	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.PT-4	Communications and control networks are protected	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-4	Communications and control networks are protected	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.PT-4	Communications and control networks are protected	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-4	Communications and control networks are protected	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-5	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
RC.RP-1	Recovery plan is executed during or after a cybersecurity incident	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
RS.AN-2	The impact of the incident is understood	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RS.MI-3	Newly identified vulnerabilities are mitigated or documented as accepted risks	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
RS.RP-1	Response plan is executed during or after an incident	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
RS.RP-1	Response plan is executed during or after an incident	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
RS.RP-1	Response plan is executed during or after an incident	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
RS.RP-1	Response plan is executed during or after an incident	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
RS.RP-1	Response plan is executed during or after an incident	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Template

The template is available on GitHub: Operational Best Practices for NIST CSF.

Operational Best Practices for NIST Privacy Framework v1.0

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom

AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the NIST Privacy Framework and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more NIST Privacy Framework controls. A NIST Privacy Framework control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P7	Mechanisms for transmitting processing permissio ns and related data values with data elements are established and in place.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
CT.DM-P7	Mechanisms for transmitting processing permissions and related data values with data elements are established and in place.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	audit-log-policy-exists(Process Check)	Establish and maintain an audit log management policy that defines your organization's logging requirements. This includes, but is not limited to, review and retention of audit logs.
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
CT.DM-P8	Audit/log records are determine d, documented, implemented, and reviewed in accordance with policy and incorpora ting the principle of data minimization.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearc h Service error logs can assist with security and access audits, and can help to diagnose availabil ity issues.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
CT.DM-P8	Audit/log records are determined, documented, implemented, and reviewed in accordance with policy and incorporating the principle of data minimization.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
ID.DE-P2	Data processing ecosystem parties (for example, service providers, customers, partners, product manufacturers, application developers) are identified, prioritized, and assessed using a privacy risk assessment process.	annual-risk-assessment-performed(Process Check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes, and devices.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
PR.AC-P1	Identities and credentials are issued, managed, verified, revoked, and audited for authorized individuals, processes , and devices.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.AC-P3	Remote access is managed.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
PR.AC-P3	Remote access is managed.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
PR.AC-P3	Remote access is managed.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-P3	Remote access is managed.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-P3	Remote access is managed.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P3	Remote access is managed.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
PR.AC-P3	Remote access is managed.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	iam-policy-no-stat ements-with-admin-access	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	sagemaker-notebook -no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-P4	Access permissio ns and authoriza tions are managed, incorporating the principles of least privilege and separation of duties.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privileges it is because the customer has specifically opted-in to those configurations. This control checks for unexpected privilege escalation when a task definition has host networking enabled but the customer has not opted-in to elevated privileges.
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P4	Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P5	Network integrity is protected (for example, network segregation, network segmentation).	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P6	Individuals and devices are proofed and bound to credentials, and authenticated commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks).	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
PR.AC-P6	Individuals and devices are proofed and bound to credentials, and authenticated commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks).	iam-user-mfa-enabl ed	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-fac tor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P6	Individuals and devices are proofed and bound to credentials, and authenticated commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks).	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P6	Individuals and devices are proofed and bound to credentials, and authenticated commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.AC-P6	Individuals and devices are proofed and bound to credentials, and authenticated commensurate with the risk of the transaction (for example, individuals' security and privacy risks and other organizational risks).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
PR.DS-P1	Data-at-rest are protected.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
PR.DS-P1	Data-at-rest are protected.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
PR.DS-P1	Data-at-rest are protected.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
PR.DS-P1	Data-at-rest are protected.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
PR.DS-P1	Data-at-rest are protected.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.
PR.DS-P1	Data-at-rest are protected.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.
PR.DS-P1	Data-at-rest are protected.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
PR.DS-P1	Data-at-rest are protected.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.
PR.DS-P1	Data-at-rest are protected.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P1	Data-at-rest are protected.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
PR.DS-P2	Data-in-transit are protected.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P2	Data-in-transit are protected.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
PR.DS-P2	Data-in-transit are protected.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
PR.DS-P2	Data-in-transit are protected.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P2	Data-in-transit are protected.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
PR.DS-P4	Adequate capacity to ensure availability is maintained.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
PR.DS-P4	Adequate capacity to ensure availability is maintained.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.DS-P4	Adequate capacity to ensure availability is maintained.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.DS-P4	Adequate capacity to ensure availability is maintained.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
PR.DS-P4	Adequate capacity to ensure availability is maintained.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P4	Adequate capacity to ensure availability is maintained.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.DS-P5	Protections against data leaks are implemented.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
PR.DS-P5	Protections against data leaks are implemented.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.
PR.DS-P5	Protections against data leaks are implemented.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.DS-P5	Protections against data leaks are implemented.	vpc-flow-logs-enab led	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interface s in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
PR.DS-P5	Protections against data leaks are implemented.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
PR.DS-P5	Protections against data leaks are implemented.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.DS-P5	Protections against data leaks are implemented.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.DS-P5	Protections against data leaks are implemented.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.DS-P5	Protections against data leaks are implemented.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
PR.DS-P6	Integrity checking mechanisms are used to verify software, firmware, and information integrity.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
PR.MA-P2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access.	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.
PR.MA-P2	Remote maintenance of organizational assets is approved, logged, and performed in a manner that prevents unauthorized access.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configura tion of information technology is created and maintaine d incorporating security principles (for example, concept of least functiona lity).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P1	A baseline configuration of information technology is created and maintained incorporating security principles (for example, concept of least functionality).	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
AT-1: PR.PO-P10	A vulnerability management plan is developed and implemented.	vuln-management-plan-exists(Process Check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P2	Configuration change control processes are established and in place.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
PR.PO-P2	Configuration change control processes are established and in place.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	dynamodb-pitr-enab led	Enable this rule to check that informati on has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	ebs-optimized-inst ance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/ O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contentio n between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	redshift-backup-en abled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	s3-bucket-replicat ion-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replicati on (CRR) supports maintaining adequate capacity and availabil ity. CRR enables automatic, asynchron ous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	redshift-cluster-m aintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organizat ion. Specifically, that they have preferred maintenan ce windows and automated snapshot retention periods for the database. This rule requires you to set the allowVers ionUpgrade. The default is true. It also lets you optionall y set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionP eriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	aurora-resources-p rotected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	backup-plan-min-fr equency-and-min-re tention-check	To help with data back-up processes , ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredF requencyValue (Config default: 1), requiredRetentionD ays (Config default: 35) and requiredF requencyUnit (Config default: days) parameters. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	backup-recovery-po int-encrypted	Ensure that encryptio n is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	backup-recovery-po int-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	backup-recovery-po int-minimum-retent ion-check	To help with data back-up processes , ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. This rule allows you to set the requiredRetentionD ays (config default: 35) parameter. The actual value should reflect your organizat ions requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	ec2-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P3	Backups of informati on are conducted , maintained, and tested.	fsx-resources-prot ected-by-backup-pl an	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PO-P7	Response plans (Incident Response and Business Continuity) and recovery plans (Incident Recovery and Disaster Recovery) are established, in place, and managed.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.PO-P8	Response and recovery plans are tested.	response-plan-tested(Process Check)	Ensure Incident response and recovery plans are tested. This can assist in understanding if your plan will be effective during an incident and if any gaps or updates need to be addressed.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
PR.PT-P2	The principle of least functionality is incorporated by configuring systems to provide only essential capabilities.	redshift-enhanced-vpc-routing-enabled	Enhanced VPC routing forces all COPY and UNLOAD traffic between the cluster and data repositories to go through your Amazon VPC. You can then use VPC features such as security groups and network access control lists to secure network traffic. You can also use VPC flow logs to monitor network traffic.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
PR.PT-P3	Communications and control networks are protected.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
PR.PT-P3	Communications and control networks are protected.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
PR.PT-P3	Communications and control networks are protected.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
PR.PT-P3	Communications and control networks are protected.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
PR.PT-P3	Communications and control networks are protected.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
PR.PT-P3	Communications and control networks are protected.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
PR.PT-P3	Communications and control networks are protected.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P3	Communications and control networks are protected.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
PR.PT-P3	Communications and control networks are protected.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
PR.PT-P4	Mechanisms (for example, failsafe, load balancing, hot swap) are implemented to achieve resilience requirements in normal and adverse situations.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Template

The template is available on GitHub: Operational Best Practices for NIST Privacy Framework v1.0.

Operational Best Practices for NYDFS 23

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the New York State Department Of Financial Services (NYDFS) cybersecurity requirements for financial services companies (23 NYCRR 500) and

AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more US NYDFS controls. A US NYDFS 23 NYCRR 500 control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confidentiality, integrity and availability of the Covered Entity's Information Systems.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(a)	(a) Cybersecurity Program. Each Covered Entity shall maintain a cybersecurity program designed to protect the confident iality, integrity and availability of the Covered Entity's Information Systems.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecu rity functions: (2) use defensive infrastructure and the implement ation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unau thorized access, use or other malicious acts.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecu rity functions: (2) use defensive infrastructure and the implement ation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unau thorized access, use or other malicious acts.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecu rity functions: (2) use defensive infrastructure and the implement ation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unau thorized access, use or other malicious acts.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(2)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (2) use defensive infrastructure and the implementation of policies and procedures to protect the Covered Entity's Information Systems, and the Nonpublic Information stored on those Information Systems, from unauthorized access, use or other malicious acts.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (3) detect Cybersecurity Events.	wafv2-logging-enab led	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(3)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (3) detect Cybersecurity Events.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	dynamodb-in-backup -plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecu rity program shall be based on the Covered Entity's Risk Assessment and designed to perfor m the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
500.02(b)(5)	(b) The cybersecurity program shall be based on the Covered Entity's Risk Assessment and designed to perform the following core cybersecurity functions: (5) recover from Cybersecurity Events and restore normal operations and services.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventing accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
500.05	The cybersecurity program for each covered entity shall include monitoring and testing, developed in accordance with the covered entity's risk assessment, designed to assess the effectiveness of the covered entity's cybersecurity program. The monitoring and testing shall include continuous monitoring or periodic penetration testing and vulnerability assessments. Absent effective continuous monitoring, or other systems to detect, on an ongoing basis, changes in information systems that may create or indicate vulnerabilities, covered entities shall conduct: (a) annual penetration testing of the covered entity's information systems determined	vuln-management-plan-exists (process check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	each given year based on relevant identifie d risks in accordanc e with the risk assessment; and (b) bi-annual vulnerabi lity assessmen ts, including any systematic scans or reviews of informati on systems reasonabl y designed to identify publicly known cybersecu rity vulnerabilities in the covered entity's information systems based on the risk assessment.		

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(b)	(b) Each Covered Entity shall maintain records required by section 500.06(a)(1) of this Part for not fewer than five years and shall maintain records required by section 500.06(a)(2) of this Part for not fewer than three yea rs.	cw-loggroup-retent ion-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troublesh ooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
500.06(a)	(a) Each Covered Entity shall securely maintain systems that, to the extent applicable and based on its Risk Assessment: (1) are designed to reconstruct material financial transactions sufficient to support normal operations and obligations of the Covered Entity; and (2) include audit trails designed to detect and respond to Cybersecurity Events that have a reasonable likelihood of materially harming any material part of the normal operations of the Covered Entity.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearc h Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	ecs-task-definition-user-for-host-mode-check	If a task definition has elevated privilege s it is because the customer has specifically opted-in to those configura tions. This control checks for unexpecte d privilege escalation when a task definitio n has host networkin g enabled but the customer has not opted-in to elevated privileges.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	no-unrestricted-ro ute-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	s3-account-level-p ublic-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthori zed remote users by preventing public access. This rule allows you to optionally set the ignorePub licAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPubl icAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	ssm-document-not-p ublic	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-user-unused-cr edentials-check	AWS Identity and Access Managemen t (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentia ls, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	secretsmanager-rot ation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potential ly reduce the business impact if the secret is compromised.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	secretsmanager-sch eduled-rotation-su ccess-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	emr-kerberos-enabl ed	The access permissio ns and authoriza tions can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribut ion center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Information and shall periodically review such access privileges.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Information and shall periodically review such access privileges.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	s3-bucket-policy-g rantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_gran tee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principal s, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	ec2-instance-no-pu blic-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearc h Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	emr-master-no-publ ic-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	internet-gateway-a uthorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	lambda-function-pu blic-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potential ly lead to degradati on of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	redshift-cluster-p ublic-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	s3-bucket-public-r ead-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	s3-bucket-public-w rite-prohibited	Manage access to resources in the AWS Cloud by only allowing authorize d users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
500.07	As part of its cybersecurity program, based on the Covered Entity's Risk Assessment each Covered Entity shall limit user access privileges to Information Systems that provide access to Nonpublic Informati on and shall per iodically review such access privileges.	sagemaker-notebook -no-direct-internet- access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
500.8(a)	(a) Each Covered Entity's cybersecurity program shall include written procedures, guidelines and standards designed to ensure the use of secure development practices for in-house developed applications utilized by the Covered Entity, and procedures for evaluating, assessing or testing the security of externally developed applications utilized by the Covered Entity within the context of the Covered Entity's technology environment.	codebuild-project-envvar-awscred-check	Ensure authentication credentials AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY do not exist within AWS Codebuild project environments. Do not store these variables in clear text. Storing these variables in clear text leads to unintended data exposure and unauthorized access.

Control ID	Control Description	AWS Config Rule	Guidance
500.8(a)	(a) Each Covered Entity's cybersecurity program shall include written procedure s, guidelines and standards designed to ensure the use of secure developme nt practices for in-house developed applications utilized by the Covered Entity, and procedure s for evaluating, assessing or testing the security of externally developed applications utilized by the Covered Entity within the context of the Covered Entity's technology environment.	codebuild-project-source-repo-url-check	Ensure the GitHub or Bitbucket source repository URL does not contain personal access tokens, sign-in credentials within AWS Codebuild project environments. Use OAuth instead of personal access tokens or sign-in credentials to grant authorization for accessing GitHub or Bitbucket repositor ies.

Control ID	Control Description	AWS Config Rule	Guidance
500.09	(a) Each covered entity shall conduct a periodic risk assessment of the covered entity's information systems sufficient to inform the design of the cybersecurity program as required by this Part. Such risk assessment shall be updated as reasonably necessary to address changes to the covered entity's information systems, nonpublic informati on or business operations. The covered entity's risk assessment shall allow for revision of controls to respond to technological developments and evolving threats and shall consider the particular risks of the covered entity's business operations related to cybersecu rity, nonpublic information collected	annual-risk-assess ment-performed (process check)>	Perform an annual risk assessment on your organization. Risk assessments can assist in determini ng the likelihood and impact of identified risks and/or vulnerabi lities affecting an organization.

Control ID	Control Description	AWS Config Rule	Guidance
	or stored, informati on systems utilized and the availability and effectiveness of controls to protect nonpublic informati on and information systems.		

Control ID	Control Description	AWS Config Rule	Guidance
500.12	(a) Multi-Factor Authentication. Based on its Risk Assessment, each Covered Entity shall use effective controls, which may include Multi-Factor Authentication or Risk-Based Authentication, to protect against unauthorized access to Nonpublic Information or Information Systems. (b) Multi-Factor Authentication shall be utilized for any individual accessing the Covered Entity's internal networks from an external network, unless the Covered Entity's CISO has approved in writing the use of reasonably equivalent or more secure access controls.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
500.12	(a) Multi-Factor Authentication. Based on its Risk Assessment, each Covered Entity shall use effective controls, which may include Multi-Factor Authentication or Risk-Based Authentication, to protect against unauthorized access to Nonpublic Information or Information Systems. (b) Multi-Factor Authentication shall be utilized for any individual accessing the Covered Entity's internal networks from an external network, unless the Covered Entity's CISO has approved in writing the use of reasonably equivalent or more secure access controls.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
500.12	(a) Multi-Factor Authentication. Based on its Risk Assessment, each Covered Entity shall use effective controls, which may include Multi-Factor Authentication or Risk-Based Authentication, to protect against unauthorized access to Nonpublic Information or Information Systems. (b) Multi-Factor Authentication shall be utilized for any individual accessing the Covered Entity's internal networks from an external network, unless the Covered Entity's CISO has approved in writing the use of reasonably equivalent or more secure access controls.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
500.12	(a) Multi-Factor Authentication. Based on its Risk Assessment, each Covered Entity shall use effective controls, which may include Multi-Factor Authentication or Risk-Based Authentication, to protect against unauthorized access to Nonpublic Information or Information Systems. (b) Multi-Factor Authentication shall be utilized for any individual accessing the Covered Entity's internal networks from an external network, unless the Covered Entity's CISO has approved in writing the use of reasonably equivalent or more secure access controls.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.12	(a) Multi-Factor Authentication. Based on its Risk Assessment, each Covered Entity shall use effective controls, which may include Multi-Factor Authentication or Risk-Based Authentication, to protect against unauthorized access to Nonpublic Information or Information Systems. (b) Multi-Factor Authentication shall be utilized for any individual accessing the Covered Entity's internal networks from an external network, unless the Covered Entity's CISO has approved in writing the use of reasonably equivalent or more secure access controls.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	cloudwatch-alarm-action-check	Amazon CloudWatch alarms alert when a metric breaches the threshold for a specified number of evaluation periods. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. This rule requires a value for alarmActionRequired (Config Default: True), insufficientDataActionRequired (Config Default: True), okActionRequired (Config Default: False). The actual value should reflect the alarm actions for your environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.
500.14(a)	(a) implement risk-based policies, procedures and controls designed to monitor the activity of Authorized Users and detect unauthorized access or use of, or tampering with, Nonpublic Information by such Authorized Users.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
500.14(b)	As part of its cybersecurity program, each covered entity shall: (b) provide regular cybersecurity awareness training for all personnel that is updated to reflect risks identified by the covered entity in its risk assessment.	security-awareness -program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Managemen t Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	s3-default-encrypt ion-kms	Ensure that encryptio n is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
500.15(a)	(a) As part of its cybersecurity program, based on its Risk Assessment, each Covered Entity shall implement controls, including encryption, to protect Nonpublic Information held or transmitted by the Covered Entity both in transit over external networks and at rest.	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.

Control ID	Control Description	AWS Config Rule	Guidance
500.16	(a) As part of its cybersecurity program, each covered entity shall establish a written incident response plan designed to promptly respond to, and recover from, any cybersecurity event materially affecting the confidentiality, integrity or availabil ity of the covered entity's informati on systems or the continuing functiona lity of any aspect of the covered entity's business or operation s.	response-plan-exists-maintained (process check)	Ensure incident response plans are established, maintained, and distributed to responsible personnel .

Template

The template is available on GitHub: Operational Best Practices for NYDFS 23.

Operational Best Practices for NZISM 3.8

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the New Zealand Government Communications Security Bureau (GCSB) Information Security Manual (NZISM) 2022-09 Version 3.8 and AWS Managed Config rules. Each Config rule applies to a specific AWS resource type, and relates to one or more NZISM controls. An NZISM control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings. Only controls representing recommended or baseline practice for information classified RESTRICTED and below are included in the mappings.

This sample conformance pack template contains mappings to controls within the NZISM framework, which is an integral part of the Protective Security Requirements (PSR) framework that sets out the New Zealand Government's expectations for the management of personnel, information and physical security.

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Control ID	Control Description	AWS Config Rule	Guidance
1149	Software security, Standard Operating Environments, Developing hardened SOEs (14.1.8.C.01.)	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application

Control ID	Control Description	AWS Config Rule	Guidance
			name, publisher and version, and other details about your environment.
1149	Software security, Standard Operating Environments, Developing hardened SOEs (14.1.8.C.01.)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1149	Software security, Standard Operating Environments, Developing hardened SOEs (14.1.8.C.01.)	ecs-containers-non privileged	This control checks if the privileged parameter in the container definitio n of Amazon ECS Task Definitions is set to true. The control fails if this parameter is equal to true. This control only evaluates the latest active revision of an Amazon ECS task definition. We recommend that you remove elevated privileges from your ECS task definitions. When the privilege parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
1149	Software security, Standard Operating Environments, Developing hardened SOEs (14.1.8.C.01.)	ecs-containers-readonly-access	This control checks if Amazon ECS containers are limited to read-only access to mounted root filesystems. This control fails if the ReadonlyRootFilesystem parameter in the container definition of Amazon ECS task definitions is set to false. This control only evaluates the latest active revision of an Amazon ECS task definition. Enabling this option reduces security attack vectors since the container instance's filesystem cannot be tampered with or written to unless it has explicit read-write permissions on its filesystem folder and directories. This control also adheres to the principle of least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
1661	Software security, Web Application Development, Agency website content (14.5.6.C.01.)	cloudfront-default-root-object-configured	This control checks whether an Amazon CloudFront distribution is configured to return a specific object that is the default root object. The control fails if the CloudFront distribution does not have a default root object configured. A user might sometimes request the distribution's root URL instead of an object in the distribution. When this happens, specifying a default root object can help you to avoid exposing the contents of your web distribution. This rule must be applied in the us-east-1 region. Deploy with template parameter DeployEdgeRules = true

Control ID	Control Description	AWS Config Rule	Guidance
1667	Software security, Web Application Development, Web applications (14.5.8.C.01.)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration. The value is 90 days.
1667	Software security, Web Application Development, Web applications (14.5.8.C.01.)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1841	Access Control and Passwords, Identification, Authentication and Passwords, Methods for system user identification and authentication (16.1.35.C.02.)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
1841	Access Control and Passwords, Identification, Authentication and Passwords, Methods for system user identification and authentication (16.1.35.C.02.)	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1841	Access Control and Passwords, Identification, Authentication and Passwords, Methods for system user identification and authentication (16.1.35.C.02.)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1841	Access Control and Passwords, Identification, Authentication and Passwords, Methods for system user identification and authentication (16.1.35.C.02.)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
1847	Access Control and Passwords, Identification, Authentication and Passwords, Protecting authentication data in transit (16.1.37.C.01.)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1847	Access Control and Passwords, Identification, Authentication and Passwords, Protecting authentication data in transit (16.1.37.C.01.)	cloudfront-viewer-policy-https	This control checks whether an Amazon CloudFront distribution requires viewers to use HTTPS directly or whether it uses redirection. The control fails if ViewerProtocolPolicy is set to allow-all for defaultCacheBehavior or for cacheBehaviors. HTTPS (TLS) can be used to help prevent potential attackers from using person-in-the-middle or similar attacks to eavesdrop on or manipulate network traffic. Only encrypted connections over HTTPS (TLS) should be allowed. This rule must be applied in the us-east-1 region. Deploy with template parameter DeployEdgeRules = true

Control ID	Control Description	AWS Config Rule	Guidance
1847	Access Control and Passwords, Identification, Authentication and Passwords, Protecting authentication data in transit (16.1.37.C.01.)	elasticsearch-node-to-node-encryption-check	This control checks whether Elasticsearch domains have node-to-node encryption enabled. This control fails if node-to-node encryption is disabled on the domain. HTTPS (TLS) can be used to help prevent potential attackers from eavesdropping on or manipulating network traffic using person-in-the-middle or similar attacks. Only encrypted connections over HTTPS (TLS) should be allowed. Enabling node-to-node encryption for Elasticsearch domains ensures that intra-cluster communications are encrypted in transit.

Control ID	Control Description	AWS Config Rule	Guidance
1847	Access Control and Passwords, Identification, Authentication and Passwords, Protecting authentication data in transit (16.1.37.C.01.)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
1847	Access Control and Passwords, Identification, Authentication and Passwords, Protecting authentication data in transit (16.1.37.C.01.)	opensearch-node-to-node-encryption-check	This control checks whether OpenSearch domains have node-to-node encryption enabled. This control fails if node-to-node encryption is disabled on the domain. HTTPS (TLS) can be used to help prevent potential attackers from eavesdropping on or manipulating network traffic using person-in-the-middle or similar attacks. Only encrypted connections over HTTPS (TLS) should be allowed. Enabling node-to-node encryption for OpenSearch domains ensures that intra-cluster communications are encrypted in transit.

Control ID	Control Description	AWS Config Rule	Guidance
1858	Access Control and Passwords, Identification, Authentication and Passwords, Password selection policy (16.1.40.C.02.)	iam-password-policy	HTTPS (TLS) can be used to help prevent potential attackers from using person-in-the-middle or similar attacks to eavesdrop on or manipulate network traffic. Only encrypted connections over HTTPS (TLS) should be allowed.
1893	Access Control and Passwords, Identification, Authentication and Passwords, Suspension of access (16.1.46.C.02.)	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule sets maxCredentialUsageAge to 30 days.

Control ID	Control Description	AWS Config Rule	Guidance
1946	Access Control and Passwords, Privileged User Access, Use of privileged accounts (16.3.5.C.02.)	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
1946	Access Control and Passwords, Privileged User Access, Use of privileged accounts (16.3.5.C.02.)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
1998	Access Control and Passwords, Event Logging and Auditing, Maintaining system management logs (16.6.6.C.02.)	cloud-trail-cloud-watch-logs-enabled	You should configure CloudTrail with CloudWatch Logs to monitor your trail logs and be notified when specific activity occurs. This rule checks whether AWS CloudTrail trails are configured to send logs to Amazon CloudWatch logs.

Control ID	Control Description	AWS Config Rule	Guidance
1998	Access Control and Passwords, Event Logging and Auditing, Maintaining system management logs (16.6.6.C.02.)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
1998	Access Control and Passwords, Event Logging and Auditing, Maintaining system management logs (16.6.6.C.02.)	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events. The minimum retention is 18 months.

Control ID	Control Description	AWS Config Rule	Guidance
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	cloudfront-accesslogs-enabled	This control checks whether server access logging is enabled on CloudFront distributions. The control fails if access logging is not enabled for a distribution. CloudFront access logs provide detailed information about every user request that CloudFront receives. Each log contains information such as the date and time the request was received, the IP address of the viewer that made the request, the source of the request, and the port number of the request from the viewer. These logs are useful for applications such as security and access audits and forensics investigation. This rule must be applied in the us-east-1 region. Deploy with template

Control ID	Control Description	AWS Config Rule	Guidance
			parameter DeployEdgeRules = true
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
2013	Access Control and Passwords, Event Logging and Auditing, Additional events to be logged (16.6.10.C.02.)	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
2022	Access Control and Passwords, Event Logging and Auditing, Event log protection (16.6.12.C.01.)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
2022	Access Control and Passwords, Event Logging and Auditing, Event log protection (16.6.12.C.01.)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
2028	Access Control and Passwords, Event Logging and Auditing, Event log archives (16.6.13.C.01.)	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events. The minimum retention is 18 months.
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data. An exemption is available for pre-production environments.

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	elasticsearch-encrypted-at-rest	This control checks whether Elasticsearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your Elasticsearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	encrypted-volumes	Because senstive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	opensearch-encrypted-at-rest	This control checks whether OpenSearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your OpenSearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2082	Cryptography, Cryptographic Fundamentals, Reducing storage and physical transfer requirements (17.1.53.C.04.)	s3-default-encryption-kms	To help protect data at rest, ensure that encryption is enabled for your S3 buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data. For more information about the encryption process and administration, use the AWS Key Management Service (AWS KMS) customer-managed CMKs. An exemption is available for buckets containing non-sensitive data provided SSE is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
2090	Cryptography, Cryptographic Fundamentals, Information and Systems Protection (17.1.55.C.02.)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
2090	Cryptography, Cryptographic Fundamentals, Information and Systems Protection (17.1.55.C.02.)	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2090	Cryptography, Cryptographic Fundamentals, Information and Systems Protection (17.1.55.C.02.)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2598	Cryptography, Transport Layer Security, Using TLS (17.4.16.C.01.)	elb-custom-security-policy-ssl-check	To help protect data in transit, ensure that your Classic ElasticLoadBalancer SSL listeners are using a custom security policy. These policies can provide various high-strength cryptographic algorithms to help ensure encrypted network communications between systems. This rule requires that you set a custom security policy for your SSL listeners. The security policy is: Protocol-TLSv1.2,ECDHE-ECDSA-AES128-GCM-SHA256.

Control ID	Control Description	AWS Config Rule	Guidance
2600	Cryptography, Transport Layer Security, Using TLS (17.4.16.C.02.)	elb-custom-security-policy-ssl-check	To help protect data in transit, ensure that your Classic ElasticLoadBalancer SSL listeners are using a custom security policy. These policies can provide various high-strength cryptographic algorithms to help ensure encrypted network communications between systems. This rule requires that you set a custom security policy for your SSL listeners. The default security policy is: Protocol-TLSv1.2,ECDHE-ECDSA-AES128-GCM-SHA256.

Control ID	Control Description	AWS Config Rule	Guidance
2726	Cryptography, Secure Shell, Automated remote access (17.5.8.C.02.)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
3021	Cryptography, Key Management, Contents of KMPs (17.9.25.C.01.)	cmk-backing-key-rotation-enabled	AWS KMS enables customers to rotate the backing key, which is key material stored in AWS KMS and is tied to the key ID of the CMK. It's the backing key that is used to perform cryptographic operations such as encryption and decryption. Automated key rotation currently retains all previous backing keys so that decryption of encrypted data can take place transparently. Rotating encryption keys helps reduce the potential impact of a compromised key because data encrypted with a new key can't be accessed with a previous key that might have been exposed.

Control ID	Control Description	AWS Config Rule	Guidance
3205	Network security, Network Managemen t, Limiting network access (18.1.13.C.02.)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems. The authorized Internet port list is: 443 only

Control ID	Control Description	AWS Config Rule	Guidance
3449	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .02.)	ec2-managedinstance-patch-compliance-status-check	Enable rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organisation's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
3449	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .02.)	ecr-private-image-scanning-enabled	This control checks whether a private ECR repository has image scanning configured. This control fails if a private ECR repositor y doesn't have image scanning configure d. Note that you must also configure scan on push for each repositor y to pass this control. ECR image scanning helps in identifying software vulnerabilities in your container images. ECR uses the Common Vulnerabi lities and Exposures (CVEs) database from the open-sour ce Clair project and provides a list of scan findings. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	Control Description	AWS Config Rule	Guidance
3449	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .02.)	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule sets allowVersionUpgrade to TRUE.
3451	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .04.)	ec2-managedinstance-patch-compliance-status-check	Enable rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organisation's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
3452	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .05.)	ec2-managedinstance-patch-compliance-status-check	Enable rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organisation's policies and procedures.
3452	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .05.)	elastic-beanstalk-managed-updates-enabled	This control checks whether managed platform updates are enabled for the Elastic Beanstalk environment. Enabling managed platform updates ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is an important step in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
3452	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .05.)	rds-automatic-minor-version-upgrade-enabled	This control checks whether automatic minor version upgrades are enabled for the RDS database instance. Enabling automatic minor version upgrades ensures that the latest minor version updates to the relational database management system (RDBMS) are installed . These upgrades might include security patches and bug fixes. Keeping up to date with patch installation is an important step in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
3453	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .06.)	ec2-managedinstance-patch-compliance-status-check	Enable rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organisation's policies and procedures.
3453	Product Security, Product Patching and Updating, Patching vulnerabilities in products (12.4.4.C .06.)	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule sets allowVersionUpgrade to TRUE.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment. An exemption is available if the load balancer is the origin for a CloudFront distribution with WAF enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	api-gw-associated-with-waf	This control checks whether an API Gateway stage uses a AWS WAF web access control list (ACL). This control fails if a AWS WAF Regional web ACL is not attached to a REST API Gateway stage. AWS WAF is a web application firewall that helps protect web applications and APIs from attacks. It enables you to configure an ACL, which is a set of rules that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure that your API Gateway stage is associated with an AWS WAF web ACL to help protect it from malicious attacks. An exemption is available if the API Gateway is the origin for a CloudFront

Control ID	Control Description	AWS Config Rule	Guidance
			distribution with WAF enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	cloudfront-associated-with-waf	This control checks whether CloudFront distributions are associated with either AWS WAF or AWS WAFv2 web ACLs. The control fails if the distribution is not associated with a web ACL. AWS WAF is a web application firewall that helps protect web applications and APIs from attacks. It allows you to configure a set of rules, called a web access control list (web ACL), that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your CloudFront distribution is associated with an AWS WAF web ACL to help protect it from malicious attacks. This rule must be applied in the us-east-1 region. Deploy with template

Control ID	Control Description	AWS Config Rule	Guidance
			parameter DeployEdgeRules = true
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-based controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	elasticsearch-in-vpc-only	This control checks whether Elasticsearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that Elasticsearch domains are not attached to public subnets. Elasticsearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to Elasticsearch domains, including network ACL and security groups

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	opensearch-in-vpc-only	This control checks whether OpenSearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that OpenSearch domains are not attached to public subnets. OpenSearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to OpenSearch domains, including network ACL and security groups.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule sets ignorePublicAcls to TRUE, blockPublicPolicy to TRUE, blockPublicAcls to TRUE, and restrictPublicBuckets to TRUE.
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
3562	Gateway security, Gateways, Configuration of gateways (19.1.12.C.01.)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3623	Gateway security, Gateways, Demilitarised zones (19.1.14.C.02.)	elasticsearch-in-vpc-only	This control checks whether Elasticsearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that Elasticsearch domains are not attached to public subnets. Elasticsearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to Elasticsearch domains, including network ACL and security groups

Control ID	Control Description	AWS Config Rule	Guidance
3623	Gateway security, Gateways, Demilitarised zones (19.1.14.C.02.)	opensearch-in-vpc-only	This control checks whether OpenSearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that OpenSearch domains are not attached to public subnets. OpenSearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to OpenSearch domains, including network ACL and security groups.

Control ID	Control Description	AWS Config Rule	Guidance
3623	Gateway security, Gateways, Demilitarised zones (19.1.14.C.02.)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
3623	Gateway security, Gateways, Demilitarised zones (19.1.14.C.02.)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3815	Network security, Intrusion Detection and Prevention, IDS/IPS Maintenance (18.4.9.C.01.)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3857	Network security, Intrusion Detection and Prevention, Configuring the IDS/IPS (18.4.11.C.01.)	guardduty-eks-protection-audit-enabled	This control checks whether GuardDuty EKS Audit Log Monitoring is enabled. GuardDuty EKS Audit Log Monitoring helps you detect potentially suspicious activities in your Amazon Elastic Kubernetes Service (Amazon EKS) clusters. EKS Audit Log Monitoring uses Kubernetes audit logs to capture chronological activities from users, applications using the Kubernetes API, and the control plane.

Control ID	Control Description	AWS Config Rule	Guidance
3857	Network security, Intrusion Detection and Prevention, Configuring the IDS/IPS (18.4.11.C.01.)	guardduty-eks-protection-runtime-enabled	This control checks whether GuardDuty EKS Runtime Monitoring with automated agent management is enabled. EKS Protection in Amazon GuardDuty provides threat detection coverage to help you protect Amazon EKS clusters within your AWS environment. EKS Runtime Monitoring uses operating system-level events to help you detect potential threats in EKS nodes and containers within your EKS clusters.

Control ID	Control Description	AWS Config Rule	Guidance
3857	Network security, Intrusion Detection and Prevention, Configuring the IDS/IPS (18.4.11.C.01.)	guardduty-lambda-protection-enabled	This control checks whether GuardDuty Lambda Protection is enabled. GuardDuty Lambda Protection helps you identify potential security threats when an AWS Lambda function gets invoked. After your enable Lambda Protection, GuardDuty starts monitoring Lambda network activity logs associated with the Lambda functions in your AWS account. When a Lambda function gets invoked and GuardDuty identifies suspicious network traffic that indicates the presence of a potentially malicious piece of code in your Lambda function, GuardDuty generates a finding.

Control ID	Control Description	AWS Config Rule	Guidance
3857	Network security, Intrusion Detection and Prevention, Configuring the IDS/IPS (18.4.11.C.01.)	guardduty-s3-protection-enabled	This control checks whether GuardDuty S3 Protection is enabled. S3 Protection enables GuardDuty to monitor object-level API operations to identify potential security risks for data within your Amazon S3 buckets. GuardDuty monitors threats against your S3 resources by analyzing AWS CloudTrail management events and CloudTrail S3 data events.
3875	Network security, Intrusion Detection and Prevention, Event management and correlation (18.4.12.C.01.)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3875	Network security, Intrusion Detection and Prevention, Event management and correlation (18.4.12. C.01.)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
4333	Data managemen t, Content Filtering , Content validation (20.3.7.C.02.)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
4333	Data managemen t, Content Filtering , Content validation (20.3.7.C.02.)	api-gw-associated-with-waf	This control checks whether an API Gateway stage uses a AWS WAF web access control list (ACL). This control fails if a AWS WAF Regional web ACL is not attached to a REST API Gateway stage. AWS WAF is a web application firewall that helps protect web applications and APIs from attacks. It enables you to configure an ACL, which is a set of rules that allow, block, or count web requests based on customiza ble web security rules and condition s that you define. Ensure that your API Gateway stage is associated with an AWS WAF web ACL to help protect it from malicious attacks. An exemption is available if the API Gateway is the origin for a CloudFront

Control ID	Control Description	AWS Config Rule	Guidance
			distribution with WAF enabled.
4441	Data management, Databases, Database files (20.4.4.C.02.)	elasticsearch-encrypted-at-rest	This control checks whether Elasticsearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your Elasticsearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
4441	Data management, Databases, Database files (20.4.4.C.02.)	opensearch-encrypted-at-rest	This control checks whether OpenSearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your OpenSearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
4441	Data management, Databases, Database files (20.4.4.C.02.)	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.
4441	Data management, Databases, Database files (20.4.4.C.02.)	rds-snapshot-encry pted	Ensure that encryptio n is enabled for your Amazon Relationa l Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4441	Data management, Databases, Database files (20.4.4.C.02.)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
4441	Data management, Databases, Database files (20.4.4.C.02.)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4441	Data management, Databases, Database files (20.4.4.C.02.)	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule sets clusterDbEncrypted to TRUE, and loggingEnabled to TRUE.

Control ID	Control Description	AWS Config Rule	Guidance
4445	Data management, Databases, Accountability (20.4.5.C.02.)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
4445	Data management, Databases, Accountability (20.4.5.C.02.)	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule sets clusterDbEncrypted to TRUE, and loggingEnabled to TRUE.

Control ID	Control Description	AWS Config Rule	Guidance
4829	Enterprise systems security, Cloud Computing, System Availability (22.1.23.C.01.)	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
4829	Enterprise systems security, Cloud Computing, System Availability (22.1.23.C.01.)	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.

Control ID	Control Description	AWS Config Rule	Guidance
4829	Enterprise systems security, Cloud Computing, System Availability (22.1.23.C.01.)	rds-cluster-multi-az-enabled	Amazon Aurora stores copies of the data in a DB cluster across multiple Availability Zones in a single AWS Region. Aurora stores these copies regardles s of whether the instances in the DB cluster span multiple Availability Zones. When data is written to the primary DB instance, Aurora synchronously replicates the data across Availability Zones to six storage nodes associated with your cluster volume. Doing so provides data redundanc y, eliminates I/O freezes, and minimizes latency spikes during system backups. Running a DB instance with high availability can enhance availabil ity during planned system maintenan ce, and help protect

Control ID	Control Description	AWS Config Rule	Guidance
			your databases against failure and Availability Zone disruption. This rule checks if Multi-AZ replication is enabled on Amazon Aurora clusters managed by Amazon RDS. An exemption is available for pre-production environments.

Control ID	Control Description	AWS Config Rule	Guidance
4829	Enterprise systems security, Cloud Computing, System Availability (22.1.23.C.01.)	rds-multi-az-support	Multi-AZ support in Amazon Relational Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availability Zone. Each Availability Zone runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. In case of an infrastructure failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operations as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
			An exemption is available for pre-production environments.
4838	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.03.)	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
4838	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.03.)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
4838	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.03.)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule sets ignorePublicAcls to TRUE, blockPublicPolicy to TRUE, blockPublicAcls to TRUE, and restrictPublicBuckets to TRUE.

Control ID	Control Description	AWS Config Rule	Guidance
4838	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.03.)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
4838	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.03.)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	elasticsearch-encrypted-at-rest	This control checks whether Elasticsearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your Elasticsearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	elasticsearch-node-to-node-encryption-check	This control checks whether Elasticsearch domains have node-to-node encryption enabled. This control fails if node-to-node encryption is disabled on the domain. HTTPS (TLS) can be used to help prevent potential attackers from eavesdropping on or manipulat ing network traffic using person-in -the-middle or similar attacks. Only encrypted connectio ns over HTTPS (TLS) should be allowed. Enabling node-to-n ode encryption for Elasticsearch domains ensures that intra-cluster communica tions are encrypted in transit.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	encrypted-volumes	Because senstive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	opensearch-encrypted-at-rest	This control checks whether OpenSearch domains have encryption-at-rest configuration enabled. The check fails if encryption at rest is not enabled. For an added layer of security for sensitive data, you should configure your OpenSearch Service domain to be encrypted at rest. When you configure encryption of data at rest, AWS KMS stores and manages your encryption keys. To perform the encryption, AWS KMS uses the Advanced Encryption Standard algorithm with 256-bit keys (AES-256).

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	opensearch-node-to-node-encryption-check	This control checks whether OpenSearch domains have node-to-node encryption enabled. This control fails if node-to-node encryption is disabled on the domain. HTTPS (TLS) can be used to help prevent potential attackers from eavesdropping on or manipulating network traffic using person-in-the-middle or similar attacks. Only encrypted connections over HTTPS (TLS) should be allowed. Enabling node-to-node encryption for OpenSearch domains ensures that intra-cluster communications are encrypted in transit.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule sets clusterDbEncrypted to TRUE, and loggingEnabled to TRUE.
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4839	Enterprise systems security, Cloud Computing, Unauthorised Access (22.1.24.C.04.)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data. An exemption is available when messages published to the topic do not contain sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. An exemption is available when a compensating recovery solution has been configured.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. An exemption is available when a compensating recovery solution has been configured.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. An exemption is available when a compensating recovery solution has been configured.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	rds-cluster-deletion-protection-enabled	Ensure Amazon RDS instances have deletion protection enabled. Use deletion protection to prevent your RDS instances from being accidenta lly or malicious ly deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup complianc e requirements. An exemption is available when a compensating recovery solution has been configured.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protection enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB per node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
4849	Enterprise systems security, Cloud Computing, Backup, Recovery Archiving and Data Remanence (22.1.26.C.01.)	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures. An exemption is available when only a single variant of an object will be created, or when a compensat ing recovery solution has been configured.

Control ID	Control Description	AWS Config Rule	Guidance
6843	Access Control and Passwords, Privileged Access Management, The Principle of Least Privilege (16.4.31. C.02.)	mfa-enabled-for-iam-console-access	MFA adds extra security by requiring users to provide unique authentication from an AWS-supported MFA mechanism - in addition to their regular sign-in credentials - when they access AWS websites or services. Supported mechanisms include U2F security keys, virtual or hardware MFA devices, and SMS-based codes. This rule checks whether AWS Multi-Factor Authentication (MFA) is enabled for all AWS Identity and Access Management (IAM) users that use a console password. The rule is compliant if MFA is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
6843	Access Control and Passwords, Privileged Access Management, The Principle of Least Privilege (16.4.31. C.02.)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
6852	Access Control and Passwords, Privileged Access Management, Suspension and Revocation of Privileged Access Credentials (16.4.33.C.01.)	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule sets maxCredentialUsageAge to 30 days.
6860	Access Control and Passwords, Privileged Access Management, Monitoring and Review (16.4.35.C.02.)	cloud-trail-cloud-watch-logs-enabled	You should configure CloudTrail with CloudWatch Logs to monitor your trail logs and be notified when specific activity occurs. This rule checks whether AWS CloudTrail trails are configured to send logs to Amazon CloudWatch logs.

Control ID	Control Description	AWS Config Rule	Guidance
6860	Access Control and Passwords, Privileged Access Management, Monitoring and Review (16.4.35. C.02.)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
6861	Access Control and Passwords, Privileged Access Management, Monitoring and Review (16.4.35. C.03.)	cloudtrail-security-trail-enabled	This rule helps ensure the use of AWS recommended security best practices for AWS CloudTrail, by checking for the enablement of multiple settings. These include the use of log encryption, log validation, and enabling AWS CloudTrail in multiple regions.

Control ID	Control Description	AWS Config Rule	Guidance
6953	Access Control and Passwords, Multi-Factor Authentication, System Architecture and Security Controls (16.7.34.C.02.)	mfa-enabled-for-iam-console-access	MFA adds extra security by requiring users to provide unique authentication from an AWS-supported MFA mechanism - in addition to their regular sign-in credentials - when they access AWS websites or services. Supported mechanisms include U2F security keys, virtual or hardware MFA devices, and SMS-based codes. This rule checks whether AWS Multi-Factor Authentication (MFA) is enabled for all AWS Identity and Access Management (IAM) users that use a console password. The rule is compliant if MFA is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
6953	Access Control and Passwords, Multi-Factor Authentication, System Architecture and Security Controls (16.7.34.C.02.)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
7436	Public Cloud Security, Identity Management and Access Control, Username and passwords (23.3.19.C.01.)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
7436	Public Cloud Security, Identity Managemen t and Access Control, Username and passwords (23.3.19. C.01.)	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
7436	Public Cloud Security, Identity Management and Access Control, Username and passwords (23.3.19.C.01.)	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7436	Public Cloud Security, Identity Management and Access Control, Username and passwords (23.3.19.C.01.)	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
7437	Public Cloud Security, Identity Management and Access Control, Username and passwords (23.3.19.C.01.)	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all IAM users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for IAM users.

Control ID	Control Description	AWS Config Rule	Guidance
7437	Public Cloud Security, Identity Managemen t and Access Control, Username and passwords (23.3.19. C.01.)	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for IAM users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
7437	Public Cloud Security, Identity Managemen t and Access Control, Username and passwords (23.3.19. C.01.)	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7437	Public Cloud Security, Identity Managemen t and Access Control, Username and passwords (23.3.19. C.01.)	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10. C.01.)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	api-gw-associated-with-waf	This control checks whether an API Gateway stage uses a AWS WAF web access control list (ACL). This control fails if a AWS WAF Regional web ACL is not attached to a REST API Gateway stage. AWS WAF is a web application firewall that helps protect web applications and APIs from attacks. It enables you to configure an ACL, which is a set of rules that allow, block, or count web requests based on customiza ble web security rules and condition s that you define. Ensure that your API Gateway stage is associated with an AWS WAF web ACL to help protect it from malicious attacks. An exemption is available if the API Gateway is the origin for a CloudFront

Control ID	Control Description	AWS Config Rule	Guidance
			distribution with WAF enabled.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within anAmazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	elasticsearch-in-vpc-only	This control checks whether Elasticsearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that Elasticsearch domains are not attached to public subnets. Elasticsearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to Elasticsearch domains, including network ACL and security groups

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	opensearch-in-vpc-only	This control checks whether OpenSearch domains are in a VPC. It does not evaluate the VPC subnet routing configuration to determine public access. You should ensure that OpenSearch domains are not attached to public subnets. OpenSearch domains deployed within a VPC can communicate with VPC resources over the private AWS network, without the need to traverse the public internet. This configuration increases the security posture by limiting access to the data in transit. VPCs provide a number of network controls to secure access to OpenSearch domains, including network ACL and security groups.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule sets ignorePublicAcls to TRUE, blockPublicPolicy to TRUE, blockPublicAcls to TRUE, and restrictPublicBuckets to TRUE.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
7466	Public Cloud Security, Data Protection in Public Cloud, Data accessibility (23.4.10.C.01.)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	cloudfront-accesslogs-enabled	This control checks whether server access logging is enabled on CloudFront distributions. The control fails if access logging is not enabled for a distribution. CloudFront access logs provide detailed information about every user request that CloudFront receives. Each log contains information such as the date and time the request was received, the IP address of the viewer that made the request, the source of the request, and the port number of the request from the viewer. These logs are useful for applications such as security and access audits and forensics investigation. This rule must be applied in the us-east-1 region.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requireme nts (23.5.11.C.01.)	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
7496	Public Cloud Security, Logging and Alerting in Public Cloud, Logging requirements (23.5.11.C.01.)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Template

The template is available on GitHub: Operational Best Practices for NZISM.

Operational Best Practices for PCI DSS 3.2.1

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Payment Card Industry Data Security Standard (PCI DSS) 3.2.1 and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more PCI DSS controls. A PCI DSS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	alb-desync-mode-check	To assist in protecting applications for HTTP Desync vulnerabilities, ensure HTTP Desync mitigation mode is enabled on your application load balancers. HTTP Desync issues can lead to request smuggling and make your applications vulnerable to request queue or cache poisoning. Desync mitigation modes are monitor, defensive, and strictest. Defensive is the default mode.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit

Control ID	Control Description	AWS Config Rule	Guidance
			to help protect that data.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
1.3	Prohibit direct public access between the Internet and any system component in the cardholder data environment.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholde r data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
1.3.6	Place system components that store cardholde r data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	netfw-stateless-rule-group-not-empty	An AWS Network Firewall rule group contains rules that define how your firewall processes traffic in your VPC. An empty stateless rule group when present in a firewall policy does not process traffic.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholde r data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
1.3.6	Place system components that store cardholde r data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholde r data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.6	Place system components that store cardholder data (such as a database) in an internal network zone, segregated from the DMZ and other untrusted networks.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessary default accounts before installing a system on the network. This applies to ALL default passwords, including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Management Protocol (SNMP) community strings, etc.).	rds-cluster-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database cluster(s).

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessary default accounts before installing a system on the network. This applies to ALL default passwords, including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Management Protocol (SNMP) community strings, etc.).	rds-instance-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Relational Database Service (Amazon RDS) database instance(s).

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessary default accounts before installing a system on the network. This applies to ALL default passwords, including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Management Protocol (SNMP) community strings, etc.).	redshift-default-admin-check	As default usernames are public knowledge, changing default usernames can assist in reducing the attack surface for your Amazon Redshift cluster(s).

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessa ry default accounts before installin g a system on the network. This applies to ALL default passwords , including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Managemen t Protocol (SNMP) community strings, etc.).	redshift-default-db-name-check	Default names are public knowledge and should be changed upon configuration. Changing the default database name of your Amazon Redshift cluster can assist in reducing the attack surface for your Redshift cluster.

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessary default accounts before installing a system on the network. This applies to ALL default passwords, including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Management Protocol (SNMP) community strings, etc.).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.1	Always change vendor-supplied defaults and remove or disable unnecessa ry default accounts before installin g a system on the network. This applies to ALL default passwords , including but not limited to those used by operating systems, software that provides security services, application and system accounts, point-of-sale (POS) terminals, payment applications, Simple Network Managemen t Protocol (SNMP) community strings, etc.).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	ec2-instance-multiple-eni-check	This rule checks if your Amazon Elastic Compute Cloud (Amazon EC2) instances have multiple ENIs. Having multiple ENIs can cause dual-homed instances, meaning instances that have multiple subnets. This can add network security complexity and introduce unintended network paths and access.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: ,Ä¢ Center for Internet Security (CIS) ,Ä¢ International Organization for Standardization (ISO) ,Ä¢ SysAdmin Audit Network Security (SANS) Institute ,Ä¢ National Institute of Standards Technology (NIST).	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	ec2-security-group-attached-to-eni-periodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of a user name and password. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configura tion standards for all system component s. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technolog y (NIST).	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: ,Ä¢ Center for Internet Security (CIS) ,Ä¢ International Organization for Standardization (ISO) ,Ä¢ SysAdmin Audit Network Security (SANS) Institute ,Ä¢ National Institute of Standards Technology (NIST).	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
2.2	Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards. Sources of industry-accepted system hardening standards may include, but are not limited to: • Center for Internet Security (CIS) • International Organization for Standardization (ISO) • SysAdmin Audit Network Security (SANS) Institute • National Institute of Standards Technology (NIST).	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.2	Enable only necessary services, protocols, daemons, etc., as required for the function of the system.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.3	Implement additional security features for any required services, protocols, or daemons that are considered to be insecure.	alb-desync-mode-check	To assist in protecting applications for HTTP Desync vulnerabilities, ensure HTTP Desync mitigation mode is enabled on your application load balancers. HTTP Desync issues can lead to request smuggling and make your applications vulnerable to request queue or cache poisoning. Desync mitigation modes are monitor, defensive, and strictest. Defensive is the default mode.
2.3	Encrypt all non-console administrative access using strong cryptography.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
2.3	Encrypt all non-conso le administrative access using strong cryptography.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.
2.3	Encrypt all non-conso le administrative access using strong cryptography.	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
2.3	Encrypt all non-conso le administrative access using strong cryptography.	opensearch-https-r equired	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
2.3	Encrypt all non-conso le administrative access using strong cryptography.	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryptio n to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.
2.4	Maintain an inventory of system component s that are in scope for PCI DSS.	ec2-security-group -attached-to-eni-p eriodic	This rule ensures the security groups are attached to an Amazon Elastic Compute Cloud (Amazon EC2) instance or to an ENI. This rule helps monitoring unused security groups in the inventory and the management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Maintain an inventory of system component s that are in scope for PCI DSS.	eip-attached	This rule ensures Elastic IPs allocated to a Amazon Virtual Private Cloud (Amazon VPC) are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances or in-use Elastic Network Interfaces. This rule helps monitor unused EIPs in your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Maintain an inventory of system components that are in scope for PCI DSS.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
2.4	Maintain an inventory of system components that are in scope for PCI DSS.	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Keep cardholder data storage to a minimum by implementing data retention and disposal policies, procedures and processes that include at least the following for all cardholder data (CHD) storage: • Limiting data storage amount and retention time to that which is required for legal, regulatory, and/or business requirements • Specific retention requirements for cardholder data • Processes for secure deletion of data when no longer needed • A quarterly process for identifying and securely deleting stored cardholder data that exceeds defined retention.	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Keep cardholder data storage to a minimum by implementing data retention and disposal policies, procedures and processes that include at least the following for all cardholder data (CHD) storage: • Limiting data storage amount and retention time to that which is required for legal, regulatory, and/or business requirements • Specific retention requirements for cardholder data • Processes for secure deletion of data when no longer needed • A quarterly process for identifying and securely deleting stored cardholder data that exceeds defined retention.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Keep cardholder data storage to a minimum by implementing data retention and disposal policies, procedures and processes that include at least the following for all cardholder data (CHD) storage: • Limiting data storage amount and retention time to that which is required for legal, regulatory, and/or business requirements • Specific retention requirements for cardholder data • Processes for secure deletion of data when no longer needed • A quarterly process for identifying and securely deleting stored cardholder data that exceeds defined retention.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
3.1	Keep cardholder data storage to a minimum by implementing data retention and disposal policies, procedures and processes that include at least the following for all cardholder data (CHD) storage: • Limiting data storage amount and retention time to that which is required for legal, regulatory, and/or business requirements • Specific retention requirements for cardholder data • Processes for secure deletion of data when no longer needed • A quarterly process for identifying and securely deleting stored cardholder data that exceeds defined retention.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (includin g on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptogra phy, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptogra phy with associate d key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individua l to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (includin g on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptogra phy, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptogra phy with associate d key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individua l to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (includin g on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptogra phy, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptogra phy with associate d key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individua l to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (includin g on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptogra phy, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptogra phy with associate d key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individua l to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	sagemaker-endpoint -configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptography, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptography with associated key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individual to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.4	Render PAN unreadable anywhere it is stored (includin g on portable digital media, backup media, and in logs) by using any of the following approaches: • One-way hashes based on strong cryptogra phy, (hash must be of the entire PAN) • Truncation (hashing cannot be used to replace the truncated segment of PAN) • Index tokens and pads (pads must be securely stored) • Strong cryptogra phy with associate d key-management processes and procedures. Note: It is a relatively trivial effort for a malicious individua l to reconstruct original PAN data if they have access to both the truncated and hashed version of a PAN. Where hashed and truncated	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	versions of the same PAN are present in an entity's environment, additional controls must be in place to ensure that the hashed and truncated versions cannot be correlated to reconstruct the original PAN.		

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2	Restrict access to cryptographic keys to the fewest number of custodians necessary.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
3.5.2	Restrict access to cryptographic keys to the fewest number of custodians necessary.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Store secret and private keys used to encrypt/decrypt cardholder data in one (or more) of the following forms at all times: • Encrypted with a key-encrypting key that is at least as strong as the data- encrypting key, and that is stored separately from the data-encrypting key • Within a secure cryptographic device (such as a hardware (host) security module (HSM) or PTS-approved point-of-interaction device) • As at least two full-length key components or key shares, in accordance with an industry- accepted method Note: It is not required that public keys be stored in one of these forms.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Store secret and private keys used to encrypt/decrypt cardholder data in one (or more) of the following forms at all times: • Encrypted with a key-encrypting key that is at least as strong as the data- encrypting key, and that is stored separately from the data-encrypting key • Within a secure cryptographic device (such as a hardware (host) security module (HSM) or PTS-approved point-of-interaction device) • As at least two full-length key components or key shares, in accordance with an industry- accepted method Note: It is not required that public keys be stored in one of these forms.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.3	Store secret and private keys used to encrypt/decrypt cardholder data in one (or more) of the following forms at all times: • Encrypted with a key-encrypting key that is at least as strong as the data- encrypting key, and that is stored separately from the data-encrypting key • Within a secure cryptographic device (such as a hardware (host) security module (HSM) or PTS-approved point-of-interaction device) • As at least two full-length key components or key shares, in accordance with an industry- accepted method Note: It is not required that public keys be stored in one of these forms.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.4	Cryptographic key changes for keys that have reached the end of their cryptoperiod (for example, after a defined period of time has passed and/or after a certain amount of cipher-text has been produced by a given key), as defined by the associated application vendor or key owner, and based on industry best practices and guidelines (for example, NIST Special Publication 800-57).	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.5	Retirement or replacement (for example, archiving, destruction, and/or revocation) of keys as deemed necessary when the integrity of the key has been weakened (for example, departure of an employee with knowledge of a clear-text key component), or keys are suspected of being compromised. Note: If retired or replaced cryptographic keys need to be retained, these keys must be securely archived (for example, by using a key-encryption key). Archived cryptographic keys should only be used for decryption/verification purposes.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.7	Prevention of unauthorized substitution of cryptographic keys.	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptography and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropriate for the encryption methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technologies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	elb-tls-https-list eners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	elbv2-acm-certific ate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	opensearch-https-r equired	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	opensearch-node-to -node-encryption-c heck	Ensure node-to-node encryptio n for Amazon OpenSearch Service is enabled. Node-to-node encryptio n enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptography and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropriate for the encryption methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technologies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		

Control ID	Control Description	AWS Config Rule	Guidance
4.1	Use strong cryptogra phy and security protocols to safeguard sensitive cardholder data during transmission over open, public networks, including the following: • Only trusted keys and certificates are accepted. • The protocol in use only supports secure versions or configurations. • The encryption strength is appropria te for the encryptio n methodology in use. Examples of open, public networks include but are not limited to: • The Internet • Wireless technolog ies, including 802.11 and Bluetooth • Cellular technologies, for example, Global System for Mobile communications (GSM), Code division multiple access	s3-bucket-ssl-requ ests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
	(CDMA) • General Packet Radio Service (GPRS) • Satellite communications		
6.2	Ensure that all system component s and software are protected from known vulnerabilities by installing applicabl e vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environme nt ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
6.2	Ensure that all system components and software are protected from known vulnerabilities by installing applicable vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
6.2	Ensure that all system component s and software are protected from known vulnerabilities by installing applicabl e vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	ec2-managedinstanc e-patch-compliance-status-check	Enable this rule to help with identific ation and documenta tion of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch complianc e in AWS Systems Manager as required by your organizat ion's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
6.2	Ensure that all system component s and software are protected from known vulnerabilities by installing applicabl e vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	ecs-fargate-latest-platform-version	Security updates and patches are deployed automatic ally for your AWS Fargate tasks. If a security issue is found that affects an AWS Fargate platform version, AWS patches the platform version. To assist in patch management of your Amazon Elastic Container Service (ECS) tasks running AWS Fargate, update your services standalone tasks to use the most recent platform version.

Control ID	Control Description	AWS Config Rule	Guidance
6.2	Ensure that all system component s and software are protected from known vulnerabilities by installing applicabl e vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	rds-automatic-mino r-version-upgrade- enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed , which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
6.2	Ensure that all system components and software are protected from known vulnerabilities by installing applicable vendor- supplied security patches. Install critical security patches within one month of release. Note: Critical security patches should be identified according to the risk ranking process defined in Requirement 6.1.	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
6.3.2	Review custom code prior to release to production or customers in order to identify any potential coding vulnerability (using either manual or automated processes) to include at least the following: • Code changes are reviewed by individuals other than the originating code author, and by individuals knowledgeable about code-review techniques and secure coding practices. • Code reviews ensure code is developed according to secure coding guidelines • Appropriate corrections are implemented prior to release. • Code-review results are reviewed and approved by management prior to release. (Continued on next page)	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	alb-desync-mode-check	To assist in protecting applications for HTTP Desync vulnerabilities, ensure HTTP Desync mitigation mode is enabled on your application load balancers. HTTP Desync issues can lead to request smuggling and make your applications vulnerable to request queue or cache poisoning. Desync mitigation modes are monitor, defensive, and strictest. Defensive is the default mode.

Control ID	Control Description	AWS Config Rule	Guidance
	ons, to continually check all traffic.		

Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
	ons, to continually check all traffic.		

Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	Control Description	AWS Config Rule	Guidance
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Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.

Control ID	Control Description	AWS Config Rule	Guidance
	ons, to continually check all traffic.		

Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.

Control ID	Control Description	AWS Config Rule	Guidance
	ons, to continually check all traffic.		

Control ID	Control Description	AWS Config Rule	Guidance
6.6	For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by either of the following methods: • Reviewing public-facing web applications from manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes Note: This assessment is not the same as the vulnerability scans performed for Requirement 11.2. • Installing an automated technical solution that detects and prevents web-based attacks (for example, a web-application firewall) in front of public-facing web applicati	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	Control Description	AWS Config Rule	Guidance
	ons, to continually check all traffic.		
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	ecs-containers-non privileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitio ns should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	ecs-containers-rea donly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance' s filesystem cannot be modified unless it has explicit read-writ e permissions.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.1	Define access needs for each role, including: • System components and data resources that each role needs to access for their job function • Level of privilege required (for example, user, administrator, etc.) for accessing resources.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-user-group-mem bership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.1.2	Restrict access to privileged user IDs to least privileges necessary to perform job responsibilities.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Managemen t (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportuni ty for an identity to receive or retain excessive privileges.
7.2.1	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following : Coverage of all system components	ecs-containers-non privileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitio ns should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following : Coverage of all system components	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following : Coverage of all system components	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following : Coverage of all system components	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following : Coverage of all system components	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Coverage of all system components	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	ecs-containers-nonprivileged	To assist with implementing the principle of least privilege, Amazon Elastic Container Service (Amazon ECS) task definitions should not have elevated privilege enabled. When this parameter is true, the container is given elevated privileges on the host container instance (similar to the root user).
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	ecs-containers-readonly-access	Enabling read only access to Amazon Elastic Container Service (ECS) containers can assist in adhering to the principal of least privilege. This option can reduces attack vectors as the container instance's filesystem cannot be modified unless it has explicit read-write permissions.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignmen t of privileges to individuals based on job classification and function.	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, restricti ng policies from containing blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignmen t of privileges to individuals based on job classification and function.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignmen t of privileges to individuals based on job classification and function.	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Managemen t Service keys. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegatin g permissions management. This rule allows you to set the blockedAc tionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom) . The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignmen t of privileges to individuals based on job classification and function.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems component s that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignmen t of privileges to individuals based on job classification and function.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Establish an access control system(s) for systems components that restricts access based on a user's need to know, and is set to "deny all" unless specifically allowed. This access control system(s) must include the following: Assignment of privileges to individuals based on job classification and function.	opensearch-access-control-enabled	Ensure fine-grained access control is enabled on your Amazon OpenSearch Service domains. Fine-grained access control provides enhanced authorization mechanisms to achieve least-privileged access to Amazon OpenSearch Service domains. It allows for role-based access control to the domain, as well as index, document, and field-level security, support for OpenSearch Service dashboards multi-tenancy, and HTTP basic authentication for OpenSearch Service and Kibana.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.3	Default “deny-all” setting.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
8.1.1	Assign all users a unique ID before allowing them to access system components or cardholder data.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
8.1.4	Remove/disable inactive user accounts within 90 days.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	codebuild-project-environment-privileged-check	To assist with implementing the principle of least privilege, ensure your Amazon CodeBuild project environment does not have privileged mode enabled. This setting should be disabled to prevent unintended access to Docker APIs as well as the container's underlying hardware.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	ecs-no-environment-secrets	As a security best practice, pass sensitive informati on to container s as environme nt variables. You can securely inject data into your Amazon Elastic Container Service (ECS) container s by referencing values stored in AWS Systems Manager Parameter Store or AWS Secrets Manager in the container definition of an Amazon ECS task definition. Then, you can expose your sensitive informati on as environment variables or in the log configuration of a container.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Applicati on Load Balancer automatically redirects unencrypt ed HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configure d with SSL certifica tes to allow backend systems to authentic ate that requests originate from API Gateway.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon Elastic File System (EFS).
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	elasticsearch-encr ypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryptio n is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryption at rest to help protect that data.
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	Using strong cryptography, render all authentication credentials (such as passwords/phrases) unreadable during transmission and storage on all system components.	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.3	Passwords/passphrases must meet the following: • Require a minimum length of at least seven characters. • Contain both numeric and alphabetic characters. Alternatively, the passwords/passphrases must have complexity and strength at least equivalent to the parameters specified above.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (PCI DSS default: false), RequireLowercaseCharacters (PCI DSS default: true), RequireSymbols (PCI DSS default: false), RequireNumbers (PCI DSS default: true), MinimumPasswordLength (PCI DSS default: 7), PasswordReusePrevention (PCI DSS default: 4), and MaxPasswordAge (PCI DSS default: 90) for

Control ID	Control Description	AWS Config Rule	Guidance
			your IAM Password Policy. The actual values should reflect your organization's policies.
8.2.4	Change user passwords/passphrases at least after every 90 days.	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.4	Change user passwords/passphrases at least after every 90 days.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundational Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCharacters (PCI DSS default: false), RequireLowercaseCharacters (PCI DSS default: true), RequireSymbols (PCI DSS default: false), RequireNumbers (PCI DSS default: true), MinimumPasswordLength (PCI DSS default: 7), PasswordReusePrevention (PCI DSS default: 4), and MaxPasswordAge (PCI DSS default: 90) for

Control ID	Control Description	AWS Config Rule	Guidance
			your IAM Password Policy. The actual values should reflect your organization's policies.
8.2.4	Change user passwords/passphrases at least after every 90 days.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.5	Do not allow an individual to submit a new password/passphrase that is the same as any of the last four passwords/passphrases he or she has used.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (PCI DSS default: false), RequireLowercaseCh aracters (PCI DSS default: true), RequireSymbols (PCI DSS default: false), RequireNumbers (PCI DSS default: true), MinimumPa sswordLength (PCI DSS default: 7), PasswordReusePreve ntion (PCI DSS default: 4), and MaxPasswordAge (PCI DSS default: 90) for

Control ID	Control Description	AWS Config Rule	Guidance
			your IAM Password Policy. The actual values should reflect your organization's policies.
8.3.1	Incorporate multi-factor authentication for all non-console access into the CDE for personnel with administrative access.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.1	Incorporate multi-factor authentication for all non-console access into the CDE for personnel with administrative access.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.1	Incorporate multi-factor authentication for all non-console access into the CDE for personnel with administrative access.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.1	Incorporate multi-factor authentication for all non-console access into the CDE for personnel with administrative access.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
8.3.2	Incorporate multi-factor authentication for all remote network access (both user and administrator, and including third-party access for support or maintenance) originating from outside the entity's network.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of a user name and password. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Incorporate multi-factor authentic ation for all remote network access (both user and administr ator, and including third-party access for support or maintenan ce) originating from outside the entity's network.	mfa-enabled-for-ia m-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protectio n on top of a user name and password. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Incorporate multi-factor authentic ation for all remote network access (both user and administr ator, and including third-party access for support or maintenan ce) originating from outside the entity's network.	root-account-hardw are-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privilege d user in an AWS account. The MFA adds an extra layer of protection for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Incorporate multi-factor authentic ation for all remote network access (both user and administr ator, and including third-party access for support or maintenan ce) originating from outside the entity's network.	root-account-mfa-e nabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for a user name and password. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
10.1	Implement audit trails to link all access to system component s to each individual user.	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system component s to each individual user.	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.1	Implement audit trails to link all access to system components to each individual user.	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system component s to each individual user.	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
10.1	Implement audit trails to link all access to system component s to each individual user.	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.1	Implement audit trails to link all access to system components to each individual user.	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.1	Implement audit trails to link all access to system components to each individual user.	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Implement automated audit trails for all system components to reconstruct the following events: All individual user accesses to cardholder data	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Implement automated audit trails for all system components to reconstruct the following events: All actions taken by any individual with root or administrative privileges	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.3	Implement automated audit trails for all system components to reconstruct the following events: Access to all audit trails	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.4	Implement automated audit trails for all system components to reconstruct the following events: Invalid logical access attempts	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.5	Implement automated audit trails for all system components to reconstruct the following events: Use of and changes to identification and authentication mechanisms—including but not limited to creation of new accounts and elevation of privileges—and all changes, additions, or deletions to accounts with root or administrative privileges	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.6	Implement automated audit trails for all system components to reconstruct the following events: Initialization, stopping, or pausing of the audit logs	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.6	Implement automated audit trails for all system components to reconstruct the following events: Initialization, stopping, or pausing of the audit logs	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.6	Implement automated audit trails for all system components to reconstruct the following events: Initialization, stopping, or pausing of the audit logs	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.7	Implement automated audit trails for all system components to reconstruct the following events: Creation and deletion of system- level objects	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.
10.3.1	Record at least the following audit trail entries for all system components for each event: User identific ation	api-gw-execution-l ogging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identific ation	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identific ation	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.
10.3.1	Record at least the following audit trail entries for all system components for each event: User identific ation	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identific ation	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Record at least the following audit trail entries for all system components for each event: User identification	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
10.5	Secure audit trails so they cannot be altered.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
10.5	Secure audit trails so they cannot be altered.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
10.5	Secure audit trails so they cannot be altered.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
10.5.2	Protect audit trail files from unauthorized modifications.	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.2	Protect audit trail files from unauthorized modifications.	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
10.5.2	Protect audit trail files from unauthorized modifications.	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.3	Promptly back up audit trail files to a centralized log server or media that is difficult to alter.	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
10.5.3	Promptly back up audit trail files to a centralized log server or media that is difficult to alter.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.3	Promptly back up audit trail files to a centralized log server or media that is difficult to alter.	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
10.5.3	Promptly back up audit trail files to a centralized log server or media that is difficult to alter.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.5	Use file-integrity monitoring or change-detection software on logs to ensure that existing log data cannot be changed without generating alerts (although new data being added should not cause an alert).	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.5	Use file-integrity monitoring or change-detection software on logs to ensure that existing log data cannot be changed without generating alerts (although new data being added should not cause an alert).	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.
10.7	Retain audit trail history for at least one year, with a minimum of three months immediately available for analysis (for example, online, archived, or restorabl e from backup).	s3-lifecycle-policy-check	Ensure Amazon S3 lifecycle policies are configured to help define actions that you want Amazon S3 to take during an object's lifetime (for example, transition objects to another storage class, archive them, or delete them after a specified period of time).

Control ID	Control Description	AWS Config Rule	Guidance
10.7	Retain audit trail history for at least one year, with a minimum of three months immediately available for analysis (for example, online, archived, or restorable from backup).	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
11.2.3	Perform internal and external scans, and rescans as needed, after any significant change. Scans must be performed by qualified personnel.	ecr-private-image-scanning-enabled	Amazon Elastic Container Repository (ECR) image scanning assists in identifying software vulnerabilities in your container images. Enabling image scanning on ECR repositories adds a layer of verification for the integrity and safety of the images being stored.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Use intrusion-detection and/or intrusion-prevention techniques to detect and/or prevent intrusions into the network. Monitor all traffic at the perimeter of the cardholder data environment as well as at critical points in the cardholder data environment, and alert personnel to suspected compromises. Keep all intrusion-detection and prevention engines, baselines, and signatures up to date.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
11.4	Use intrusion-detection and/or intrusion-prevention techniques to detect and/or prevent intrusions into the network. Monitor all traffic at the perimeter of the cardholder data environment as well as at critical points in the cardholder data environment, and alert personnel to suspected compromises. Keep all intrusion-detection and prevention engines, baselines, and signatures up to date.	netfw-policy-rule-group-associated	An AWS Network Firewall policy defines how your firewall monitors and handles traffic in an Amazon VPC. You configure stateless and stateful rule groups to filter packets and traffic flows, and you define default traffic handling.

Control ID	Control Description	AWS Config Rule	Guidance
11.5	Deploy a change-detection mechanism (for example, file-integrity monitoring tools) to alert personnel to unauthorized modification (including changes, additions, and deletions) of critical system files, configuration files, or content files; and configure the software to perform critical file comparisons at least weekly.	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.

Control ID	Control Description	AWS Config Rule	Guidance
11.5	Deploy a change-detection mechanism (for example, file-integrity monitoring tools) to alert personnel to unauthorized modification (including changes, additions, and deletions) of critical system files, configuration files, or content files; and configure the software to perform critical file comparisons at least weekly.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Template

The template is available on GitHub: Operational Best Practices for PCI DSS 3.2.1.

Operational Best Practices for PCI DSS 4.0 (Excluding global resource types)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates,

are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Payment Card Industry Data Security Standard (PCI DSS) 4.0 (Excluding global resource types) and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more PCI DSS controls. A PCI DSS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	transfer-family-server-no-ftp	Ensure that a server created with AWS Transfer Family does not use FTP for endpoint connection. The rule is NON_COMPLIANT if the server protocol for endpoint connection is FTP-enabled.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifie r (INCOMING _SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifie r (INCOMING _SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-full-packets	Ensure that an AWS Network Firewall policy is configured with a user defined default stateless action for full packets. This rule is NON_COMPLIANT if default stateless action for full packets does not match with user defined default stateless action.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.5	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ecs-task-definition-pid-mode-check	Ensure that ECSTaskDefinitions are configured to share a host's process namespace with its Amazon Elastic Container Service (Amazon ECS) containers. The rule is NON_COMPLIANT if the pidMode parameter is set to 'host'.
1.4.5	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ec2-launch-template-public-ip-disabled	Ensure that Amazon EC2 Launch Templates are not set to assign public IP addresses to Network Interfaces. The rule is NON_COMPLIANT if the default version of an EC2 Launch Template has at least 1 Network Interface with 'AssociatePublicIpAddress' set to 'true'.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	emr-block-public-a ccess	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurit yGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGrou pRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	aurora-resources-protected-by-backup-plan	Ensure that Amazon Aurora DB clusters are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon Relational Database Service (Amazon RDS) Database Cluster is not protected by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	db-instance-backup-enabled	Ensure that RDS DB instances have backups enabled. Optionally, the rule checks the backup retention period and the backup window.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-in-backup-plan	Ensure that Amazon DynamoDB tables are present in AWS Backup Plans. The rule is NON_COMPLIANT if Amazon DynamoDB tables are not present in any AWS Backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-resources-protected-by-backup-plan	Ensure that Amazon DynamoDB tables are protected by a backup plan. The rule is NON_COMPLIANT if the DynamoDB Table is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ebs-in-backup-plan	Ensure that Amazon Elastic Block Store (Amazon EBS) volumes are added in backup plans of AWS Backup. The rule is NON_COMPLIANT if Amazon EBS volumes are not included in backup plans.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ebs-resources-protected-by-backup-plan	Ensure that Amazon Elastic Block Store (Amazon EBS) volumes are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EBS volume is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ec2-resources-protected-by-backup-plan	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) instances are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EC2 instance is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	efs-resources-protected-by-backup-plan	Ensure that Amazon Elastic File System (Amazon EFS) file systems are protected by a backup plan. The rule is NON_COMPLIANT if the EFS File System is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	elasticache-redis-cluster-automatic-backup-check	Check if the Amazon ElastiCache Redis clusters have automatic backup turned on. The rule is NON_COMPLIANT if the SnapshotRetentionLimit for Redis cluster is less than the SnapshotRetentionPeriod parameter. For example: If the parameter is 15 then the rule is non-compliant if the snapshotRetentionPeriod is between 0-15.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	fsx-resources-protected-by-backup-plan	Ensure that Amazon FSx File Systems are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon FSx File System is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-backup-retention-check	Ensure that an Amazon Neptune DB cluster retention period is set to specific number of days. The rule is NON_COMPLIANT if the retention period is less than the value specified by the parameter.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	rds-in-backup-plan	Ensure that Amazon Relational Database Service (Amazon RDS) databases are present in AWS Backup plans. The rule is NON_COMPLIANT if Amazon RDS databases are not included in any AWS Backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	redshift-backup-enabled	Ensure that Amazon Redshift automated snapshots are enabled for clusters. The rule is NON_COMPLIANT if the value for automated SnapshotRetentionPeriod is greater than MaxRetentionPeriod or less than MinRetentionPeriod or the value is 0.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-resources-protected-by-backup-plan	Ensure that Amazon Simple Storage Service (Amazon S3) buckets are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon S3 bucket is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	db-instance-backup-enabled	Ensure that RDS DB instances have backups enabled. Optionally, the rule checks the backup retention period and the backup window.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-default-lock-enabled	Ensure that the S3 bucket has lock enabled, by default. The rule is NON_COMPLIANT if the lock is not enabled.
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-versioning-enabled	Ensure that versioning is enabled for your S3 buckets. Optionally, the rule checks if MFA delete is enabled for your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.3	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repositor y.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPL IANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.

Control ID	Control Description	AWS Config Rule	Guidance
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
12.4.2.1	PCI DSS compliance is managed. (PCI-DSS-v4.0)	service-catalog-shared-within-organization	Ensure that AWS Service Catalog shares portfolios to an organization (a collection of AWS accounts treated as a single unit) when integration is enabled with AWS Organizations. The rule is NON_COMPLIANT if the `Type` value of a share is `ACCOUNT`.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	transfer-family-server-no-ftp	Ensure that a server created with AWS Transfer Family does not use FTP for endpoint connection. The rule is NON_COMPLIANT if the server protocol for endpoint connection is FTP-enabled.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	athena-workgroup-encrypted-at-rest	Ensure that an Amazon Athena workgroup is encrypted at rest. The rule is NON_COMPLIANT if encryption of data at rest is not enabled for an Athena workgroup.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-snapshot-encrypted	Ensure that an Amazon Neptune DB cluster has snapshots encrypted. The rule is NON_COMPLIANT if a Neptune cluster does not have snapshots encrypted.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	redshift-cluster-kms-enabled	Ensure that Amazon Redshift clusters are using a specified AWS Key Management Service (AWS KMS) key for encryptio n. The rule is COMPLIANT if encryption is enabled and the cluster is encrypted with the key provided in the kmsKeyArn parameter. The rule is NON_COMPL IANT if the cluster is not encrypted or encrypted with another key.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	codebuild-project-s3-logs-encrypted	Ensure that an AWS CodeBuild project configured with Amazon S3 Logs has encryption enabled for its logs. The rule is NON_COMPLIANT if 'encryptionDisable d' is set to 'true' in a S3LogsConfig of a CodeBuild project.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	eks-secrets-encrypted	Ensure that Amazon Elastic Kubernetes Service clusters are configured to have Kubernetes secrets encrypted using AWS Key Management Service (KMS) keys.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	api-gw-cache-enabled-and-encrypted	Ensure that all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in an Amazon API Gateway stage is not configured to cache or the cache is not encrypted.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	dynamodb-table-encrypted-kms	Ensure that Amazon DynamoDB table is encrypted with AWS Key Management Service (KMS). The rule is NON_COMPLIANT if Amazon DynamoDB table is not encrypted with AWS KMS. The rule is also NON_COMPLIANT if the encrypted AWS KMS key is not present in kmsKeyArns input parameter.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	eks-cluster-secrets-encrypted	Ensure that Amazon EKS clusters are not configured to have Kubernetes secrets encrypted using AWS KMS. The rule is NON_COMPLIANT if an EKS cluster does not have an encryptionConfig resource or if encryptionConfig does not name secrets as a resource.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	kinesis-stream-encrypted	Ensure that Amazon Kinesis streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT for a Kinesis stream if 'StreamEncryption' is not present.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon Neptune DB clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.5.1.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.2	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1.2	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.3	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1.3	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.4	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1.4	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-certificate-rsa-check	Ensure that RSA certificates managed by AWS Certificate Manager (ACM) have a key length of at least '2048' bits.The rule is NON_COMPL IANT if the minimum key length is less than 2048 bits.
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.2	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.2	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.4	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.4	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.6	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.6	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.7	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.7	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-redis-tls-enab led	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPL IANT if TLS/SSL encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryptio n in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communica tion is enabled for in-cluster broker node connections.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
6.3.3	Security vulnerabilities are identified and addressed. (PCI-DSS-v4.0)	lambda-function-settings-check	Ensure that the AWS Lambda function settings for runtime, role, timeout, and memory size match the expected values. The rule ignores functions with the 'Image' package type and functions with runtime set to 'OS-only Runtime'. The rule is NON_COMPLIANT if the Lambda function settings do not match the expected values.

Control ID	Control Description	AWS Config Rule	Guidance
6.3.3	Security vulnerabilities are identified and addressed. (PCI-DSS-v4.0)	eks-cluster-oldest-supported-version	Ensure that an Amazon Elastic Kubernetes Service (EKS) cluster is not running the oldest supported version. The rule is NON_COMPLIANT if an EKS cluster is running oldest supported version (equal to the parameter 'oldestVersionSupported').
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-webacl-not-empty	Ensure that a WAFv2 Web ACL contains any WAF rules or WAF rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rules or WAF rule groups.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-rulegroup-not-empty	Ensure that WAFv2 Rule Groups contain rules. The rule is NON_COMPLIANT if there are no rules in a WAFv2 Rule Group.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-webacl-not-empty	Ensure that a WAFv2 Web ACL contains any WAF rules or WAF rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rules or WAF rule groups.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-rulegroup-not-empty	Ensure that WAFv2 Rule Groups contain rules. The rule is NON_COMPLIANT if there are no rules in a WAFv2 Rule Group.

Control ID	Control Description	AWS Config Rule	Guidance
6.5.5	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codedeploy-lambda-allatonce-traffic-shift-disabled	Ensure that the deployment group for Lambda Compute Platform is not using the default deployment configuration. The rule is NON_COMPLIANT if the deployment group is using the deployment configuration 'CodeDeployDefault.LambdaAllAtOnce'.
6.5.6	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codedeploy-lambda-allatonce-traffic-shift-disabled	Ensure that the deployment group for Lambda Compute Platform is not using the default deployment configuration. The rule is NON_COMPLIANT if the deployment group is using the deployment configuration 'CodeDeployDefault.LambdaAllAtOnce'.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.4	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.6	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.6	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentic ation enabled. The rule is NON_COMPL IANT if an Amazon Neptune cluster does not have IAM database authentic ation enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.2.1	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.1	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.
8.2.4	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.4	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.5	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.5	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.2.6	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-imdsv2-check	Ensure that your Amazon Elastic Compute Cloud (Amazon EC2) instance metadata version is configured with Instance Metadata Service Version 2 (IMDSv2). The rule is NON_COMPLIANT if the HttpTokens is set to optional.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	autoscaling-launchconfig-requires-imdsv2	Ensure that only IMDSv2 is enabled. This rule is NON_COMPLIANT if the Metadata version is not included in the launch configuration or if both Metadata V1 and V2 are enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.
8.3.11	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.3.11	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	athena-workgroup-encrypted-at-rest	Ensure that an Amazon Athena workgroup is encrypted at rest. The rule is NON_COMPLIANT if encryption of data at rest is not enabled for an Athena workgroup.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-snapshot-encrypted	Ensure that an Amazon Neptune DB cluster has snapshots encrypted. The rule is NON_COMPLIANT if a Neptune cluster does not have snapshots encrypted.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	redshift-cluster-kms-enabled	Ensure that Amazon Redshift clusters are using a specified AWS Key Management Service (AWS KMS) key for encryptio n. The rule is COMPLIANT if encryption is enabled and the cluster is encrypted with the key provided in the kmsKeyArn parameter. The rule is NON_COMPL IANT if the cluster is not encrypted or encrypted with another key.
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	codebuild-project-s3-logs-encrypted	Ensure that an AWS CodeBuild project configured with Amazon S3 Logs has encryption enabled for its logs. The rule is NON_COMPLIANT if 'encryptionDisable d' is set to 'true' in a S3LogsConfig of a CodeBuild project.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	eks-secrets-encrypted	Ensure that Amazon Elastic Kubernetes Service clusters are configured to have Kubernetes secrets encrypted using AWS Key Management Service (KMS) keys.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	api-gw-cache-enabled-and-encrypted	Ensure that all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in an Amazon API Gateway stage is not configured to cache or the cache is not encrypted.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dynamodb-table-encrypted-kms	Ensure that Amazon DynamoDB table is encrypted with AWS Key Management Service (KMS). The rule is NON_COMPLIANT if Amazon DynamoDB table is not encrypted with AWS KMS. The rule is also NON_COMPLIANT if the encrypted AWS KMS key is not present in kmsKeyArns input parameter.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	eks-cluster-secrets-encrypted	Ensure that Amazon EKS clusters are not configured to have Kubernetes secrets encrypted using AWS KMS. The rule is NON_COMPLIANT if an EKS cluster does not have an encryptio nConfig resource or if encryptionConfig does not name secrets as a resource.
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	kinesis-stream-enc rypted	Ensure that Amazon Kinesis streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT for a Kinesis stream if 'StreamEncryption' is not present.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon Neptune DB clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.
8.4.1	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
8.4.2	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.4.3	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	emr-block-public-a ccess	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurit yGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGrou pRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
A1.2.3	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	security-account-information-provided	Ensure that you have provided security contact information for your AWS account contacts. The rule is NON_COMPLIANT if security contact information within the account is not provided.

Control ID	Control Description	AWS Config Rule	Guidance
A3.2.5.1	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-auto-sensitive-data-discovery-check	Ensure that automated sensitive data discovery is enabled for Amazon Macie. The rule is NON_COMPLIANT if automated sensitive data discovery is disabled. The rule is APPLICABLE for administrator accounts and NOT_APPLICABLE for member accounts.
A3.2.5.1	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-status-check	Ensure that Amazon Macie is enabled in your account per region. The rule is NON_COMPLIANT if the 'status' attribute is not set to 'ENABLED'.

Control ID	Control Description	AWS Config Rule	Guidance
A3.2.5.2	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-auto-sensitive-data-discovery-check	Ensure that automated sensitive data discovery is enabled for Amazon Macie. The rule is NON_COMPLIANT if automated sensitive data discovery is disabled. The rule is APPLICABLE for administrator accounts and NOT_APPLICABLE for member accounts.
A3.2.5.2	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-status-check	Ensure that Amazon Macie is enabled in your account per region. The rule is NON_COMPLIANT if the 'status' attribute is not set to 'ENABLED'.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Template

The template is available on GitHub: Operational Best Practices for PCI DSS 4.0 (Excluding global resource types).

Operational Best Practices for PCI DSS 4.0 (Including global resource types)

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Payment Card Industry Data Security Standard (PCI DSS) 4.0 (Excluding global resource types) and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more PCI DSS controls. A PCI DSS control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-security-policy-check	Ensure that Amazon CloudFront distributions are using a minimum security policy and cipher suite of TLSv1.2 or greater for viewer connections. This rule is NON_COMPLIANT for a CloudFront distribution if the minimumProtocolVersion is below TLSv1.2_2018.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-sni-enabled	Ensure that Amazon CloudFront distributions are using a custom SSL certificate and are configured to use SNI to serve HTTPS requests. The rule is NON_COMPLIANT if a custom SSL certificate is associated but the SSL support method is a dedicated IP address.
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	transfer-family-server-no-ftp	Ensure that a server created with AWS Transfer Family does not use FTP for endpoint connection. The rule is NON_COMPLIANT if the server protocol for endpoint connection is FTP-enabled.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.5	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifie r (INCOMING _SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.2.8	Network security controls (NSCs) are configured and maintained. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.3.1	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.3.2	Network access to and from the cardholder data environment is restricted. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.1	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifie r (INCOMING _SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	emr-block-public-a ccess	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurit yGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGrou pRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.4.2	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.3	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	netfw-policy-default-action-full-packets	Ensure that an AWS Network Firewall policy is configured with a user defined default stateless action for full packets. This rule is NON_COMPLIANT if default stateless action for full packets does not match with user defined default stateless action.
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	redshift-enhanced-vpc-routing-enabled	Ensure that Amazon Redshift clusters have 'enhancedVpcRouting' enabled. The rule is NON_COMPLIANT if 'enhancedVpcRouting' is not enabled or if the configuration.enhancedVpcRouting field is 'false'.
1.4.4	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.4.5	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ecs-task-definition-pid-mode-check	Ensure that ECSTaskDefinitions are configured to share a host's process namespace with its Amazon Elastic Container Service (Amazon ECS) containers. The rule is NON_COMPLIANT if the pidMode parameter is set to'host'.
1.4.5	Network connections between trusted and untrusted networks are controlled. (PCI-DSS-v4.0)	ec2-launch-template-public-ip-disabled	Ensure that Amazon EC2 Launch Templates are not set to assign public IP addresses to Network Interfaces. The rule is NON_COMPLIANT if the default version of an EC2 Launch Template has at least 1 Network Interface with 'AssociatePublicIpAddress' set to 'true'.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifier (INCOMING_SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	emr-block-public-a ccess	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurit yGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGrou pRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
1.5.1	Risks to the CDE from computing devices that are able to connect to both untrusted networks and the CDE are mitigated. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.1	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.3	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.4	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.5	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.6	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.1.7	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.2.2	Audit logs are implemented to support the detection of anomalies and suspicious activity, and the forensic analysis of events. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.3.1	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
10.3.2	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	aurora-resources-protected-by-backup-plan	Ensure that Amazon Aurora DB clusters are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon Relational Database Service (Amazon RDS) Database Cluster is not protected by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	db-instance-backup-enabled	Ensure that RDS DB instances have backups enabled. Optionally, the rule checks the backup retention period and the backup window.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-in-backup-plan	Ensure that Amazon DynamoDB tables are present in AWS Backup Plans. The rule is NON_COMPLIANT if Amazon DynamoDB tables are not present in any AWS Backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-resources-protected-by-backup-plan	Ensure that Amazon DynamoDB tables are protected by a backup plan. The rule is NON_COMPLIANT if the DynamoDB Table is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ebs-in-backup-plan	Ensure that Amazon Elastic Block Store (Amazon EBS) volumes are added in backup plans of AWS Backup. The rule is NON_COMPLIANT if Amazon EBS volumes are not included in backup plans.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ebs-resources-protected-by-backup-plan	Ensure that Amazon Elastic Block Store (Amazon EBS) volumes are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EBS volume is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	ec2-resources-protected-by-backup-plan	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) instances are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon EC2 instance is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	efs-in-backup-plan	Ensure that Amazon Elastic File System (Amazon EFS) file systems are added in the backup plans of AWS Backup. The rule is NON_COMPLIANT if EFS file systems are not included in the backup plans.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	efs-resources-protected-by-backup-plan	Ensure that Amazon Elastic File System (Amazon EFS) file systems are protected by a backup plan. The rule is NON_COMPLIANT if the EFS File System is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	elasticache-redis-cluster-automatic-backup-check	Check if the Amazon ElastiCache Redis clusters have automatic backup turned on. The rule is NON_COMPLIANT if the SnapshotRetentionLimit for Redis cluster is less than the SnapshotRetentionPeriod parameter. For example: If the parameter is 15 then the rule is non-compliant if the snapshotRetentionPeriod is between 0-15.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	fsx-resources-protected-by-backup-plan	Ensure that Amazon FSx File Systems are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon FSx File System is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	neptune-cluster-backup-retention-check	Ensure that an Amazon Neptune DB cluster retention period is set to specific number of days. The rule is NON_COMPLIANT if the retention period is less than the value specified by the parameter.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	rds-in-backup-plan	Ensure that Amazon Relational Database Service (Amazon RDS) databases are present in AWS Backup plans. The rule is NON_COMPLIANT if Amazon RDS databases are not included in any AWS Backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	rds-resources-protected-by-backup-plan	Ensure that Amazon Relational Database Service (Amazon RDS) instances are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon RDS Database instance is not covered by a backup plan.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	redshift-backup-enabled	Ensure that Amazon Redshift automated snapshots are enabled for clusters. The rule is NON_COMPLIANT if the value for automated SnapshotRetentionPeriod is greater than MaxRetentionPeriod or less than MinRetentionPeriod or the value is 0.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-resources-protected-by-backup-plan	Ensure that Amazon Simple Storage Service (Amazon S3) buckets are protected by a backup plan. The rule is NON_COMPLIANT if the Amazon S3 bucket is not covered by a backup plan.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	db-instance-backup-enabled	Ensure that RDS DB instances have backups enabled. Optionally, the rule checks the backup retention period and the backup window.
10.3.3	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudfront-origin-access-identity-enabled	Ensure that CloudFront distribution with Amazon S3 Origin type has origin access identity (OAI) configured. The rule is NON_COMPLIANT if the CloudFront distribution is backed by S3 and any origin type is not OAI configured, or the origin is not an S3 bucket.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudfront-s3-origin-access-control-enabled	Ensure that an Amazon CloudFront distribution with an Amazon Simple Storage Service (Amazon S3) Origin type has origin access control (OAC) enabled. The rule is NON_COMPLIANT for CloudFront distributions with Amazon S3 origins that don't have OAC enabled.
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-default-lock-enabled	Ensure that the S3 bucket has lock enabled, by default. The rule is NON_COMPLIANT if the lock is not enabled.
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	s3-bucket-versioning-enabled	Ensure that versioning is enabled for your S3 buckets. Optionally, the rule checks if MFA delete is enabled for your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
10.3.4	Audit logs are protected from destruction and unauthorized modifications. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.4.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.1.1	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.4.2	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.4.3	Audit logs are reviewed to identify anomalies or suspicious activity. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repositor y.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
10.5.1	Audit log history is retained and available for analysis. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPL IANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
10.6.3	Time-synchronization mechanisms support consistent time settings across all systems. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.7.1	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.

Control ID	Control Description	AWS Config Rule	Guidance
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.
10.7.2	Failures of critical security control systems are detected, reported, and responded to promptly. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
11.5.2	Network intrusions and unexpected file changes are detected and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
11.6.1	Unauthorized changes on payment pages are detected and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.

Control ID	Control Description	AWS Config Rule	Guidance
12.10.5	Suspected and confirmed security incidents that could impact the CDE are responded to immediately. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
12.4.2.1	PCI DSS compliance is managed. (PCI-DSS-v4.0)	service-catalog-shared-within-organization	Ensure that AWS Service Catalog shares portfolios to an organization (a collection of AWS accounts treated as a single unit) when integration is enabled with AWS Organizations. The rule is NON_COMPLIANT if the `Type` value of a share is `ACCOUNT`.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-security-policy-check	Ensure that Amazon CloudFront distributions are using a minimum security policy and cipher suite of TLSv1.2 or greater for viewer connections. This rule is NON_COMPLIANT for a CloudFront distribution if the minimumProtocolVersion is below TLSv1.2_2018.
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-sni-enabled	Ensure that Amazon CloudFront distributions are using a custom SSL certificate and are configured to use SNI to serve HTTPS requests. The rule is NON_COMPLIANT if a custom SSL certificate is associated but the SSL support method is a dedicated IP address.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	transfer-family-server-no-ftp	Ensure that a server created with AWS Transfer Family does not use FTP for endpoint connection. The rule is NON_COMPLIANT if the server protocol for endpoint connection is FTP-enabled.
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.
2.2.5	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	dax-tls-endpoint-encryption	Ensure that your Amazon DynamoDB Accelerator (DAX) cluster has ClusterEndpointEncryptionType set to TLS. The rule is NON_COMPLIANT if a DAX cluster is not encrypted by transport layer security (TLS).

Control ID	Control Description	AWS Config Rule	Guidance
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.
2.2.7	System components are configured and managed securely. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repositor y.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.2.1	Storage of account data is kept to a minimum. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPL IANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.1	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.3.1.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.
3.3.2	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ec2-volume-inuse-check	Ensure that EBS volumes are attached to EC2 instances. Optionally ensure that EBS volumes are marked for deletion when an instance is terminated.
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	ecr-private-lifecycle-policy-configured	Ensure that a private Amazon Elastic Container Registry (ECR) repository has at least one lifecycle policy configured. The rule is NON_COMPLIANT if no lifecycle policy is configured for the ECR private repository.
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	dynamodb-pitr-enabled	Ensure that point-in-time recovery (PITR) is enabled for Amazon DynamoDB tables. The rule is NON_COMPLIANT if PITR is not enabled for DynamoDB tables.

Control ID	Control Description	AWS Config Rule	Guidance
3.3.3	Sensitive authentication data (SAD) is not stored after authorization. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	athena-workgroup-encrypted-at-rest	Ensure that an Amazon Athena workgroup is encrypted at rest. The rule is NON_COMPLIANT if encryption of data at rest is not enabled for an Athena workgroup.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-snapshot-encrypted	Ensure that an Amazon Neptune DB cluster has snapshots encrypted. The rule is NON_COMPLIANT if a Neptune cluster does not have snapshots encrypted.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	redshift-cluster-kms-enabled	Ensure that Amazon Redshift clusters are using a specified AWS Key Management Service (AWS KMS) key for encryptio n. The rule is COMPLIANT if encryption is enabled and the cluster is encrypted with the key provided in the kmsKeyArn parameter. The rule is NON_COMPL IANT if the cluster is not encrypted or encrypted with another key.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	codebuild-project-artifact-encryption	Ensure that an AWS CodeBuild project has encryption enabled for all of its artifacts. The rule is NON_COMPLIANT if 'encryptionDisabled' is set to 'true' for any primary or secondary (if present) artifact configurations.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	codebuild-project-s3-logs-encrypted	Ensure that an AWS CodeBuild project configured with Amazon S3 Logs has encryption enabled for its logs. The rule is NON_COMPLIANT if'encryptionDisabled' is set to'true' in a S3LogsConfig of a CodeBuild project.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	dax-encryption-enabled	Ensure that Amazon DynamoDB Accelerator (DAX) clusters are encrypted. The rule is NON_COMPLIANT if a DAX cluster is not encrypted.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	eks-secrets-encrypted	Ensure that Amazon Elastic Kubernetes Service clusters are configured to have Kubernetes secrets encrypted using AWS Key Management Service (KMS) keys.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	api-gw-cache-enabled-and-encrypted	Ensure that all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in an Amazon API Gateway stage is not configured to cache or the cache is not encrypted.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	docdb-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon DocumentDB (with MongoDB compatibility) clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	dynamodb-table-encrypted-kms	Ensure that Amazon DynamoDB table is encrypted with AWS Key Management Service (KMS). The rule is NON_COMPLIANT if Amazon DynamoDB table is not encrypted with AWS KMS. The rule is also NON_COMPLIANT if the encrypted AWS KMS key is not present in kmsKeyArns input parameter.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	dynamodb-table-encryption-enabled	Ensure that the Amazon DynamoDB tables are encrypted and checks their status. The rule is COMPLIANT if the status is enabled or enabling.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	eks-cluster-secrets-encrypted	Ensure that Amazon EKS clusters are not configured to have Kubernetes secrets encrypted using AWS KMS. The rule is NON_COMPLIANT if an EKS cluster does not have an encryptionConfig resource or if encryptionConfig does not name secrets as a resource.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	kinesis-stream-encrypted	Ensure that Amazon Kinesis streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT for a Kinesis stream if 'StreamEncryption' is not present.
3.5.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon Neptune DB clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.
3.5.1.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
3.5.1.1	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in PermittedPublicSecurityGroupRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
3.5.1.3	Primary account number (PAN) is secured wherever it is stored. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
3.6.1.2	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.2	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
3.6.1.2	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.3	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.6.1.3	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.3	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
3.6.1.4	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.6.1.4	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
3.6.1.4	Cryptographic keys used to protect stored account data are secured. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-certificate-rsa-check	Ensure that RSA certificates managed by AWS Certificate Manager (ACM) have a key length of at least '2048' bits.The rule is NON_COMPL IANT if the minimum key length is less than 2048 bits.
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associate d with an Amazon CloudFront distribut ion is not the default SSL certificate. The rule is NON_COMPL IANT if a CloudFront distribution uses the default SSL certifica te.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.1	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.2	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.2	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associate d with an Amazon CloudFront distribut ion is not the default SSL certificate. The rule is NON_COMPL IANT if a CloudFront distribution uses the default SSL certifica te.
3.7.2	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.4	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.7.4	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associate d with an Amazon CloudFront distribut ion is not the default SSL certificate. The rule is NON_COMPL IANT if a CloudFront distribution uses the default SSL certifica te.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.4	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
3.7.6	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.6	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associate d with an Amazon CloudFront distribut ion is not the default SSL certificate. The rule is NON_COMPL IANT if a CloudFront distribution uses the default SSL certifica te.
3.7.6	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.7	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	acm-pca-root-ca-di sabled	Ensure that AWS Private Certifica te Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
3.7.7	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associate d with an Amazon CloudFront distribut ion is not the default SSL certificate. The rule is NON_COMPL IANT if a CloudFront distribution uses the default SSL certifica te.

Control ID	Control Description	AWS Config Rule	Guidance
3.7.7	Where cryptography is used to protect stored account data, key managemen t processes and procedures covering all aspects of the key lifecycle are defined and implemented. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-redis-tls-enab led	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPL IANT if TLS/SSL encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dax-tls-endpoint-encryption	Ensure that your Amazon DynamoDB Accelerator (DAX) cluster has ClusterEndpointEncryptionType set to TLS. The rule is NON_COMPLIANT if a DAX cluster is not encrypted by transport layer security (TLS).
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	acm-pca-root-ca-disabled	Ensure that AWS Private Certificate Authority (AWS Private CA) has a root CA that is disabled. The rule is NON_COMPLIANT for root CAs with status that is not DISABLED.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dax-tls-endpoint-e ncryption	Ensure that your Amazon DynamoDB Accelerator (DAX) cluster has ClusterEn dpointEncryptionTy pe set to TLS. The rule is NON_COMPL IANT if a DAX cluster is not encrypted by transport layer security (TLS).

Control ID	Control Description	AWS Config Rule	Guidance
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.
4.2.1.1	PAN is protected with strong cryptography during transmission. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.

Control ID	Control Description	AWS Config Rule	Guidance
5.3.4	Anti-malware mechanisms and processes are active, maintained, and monitored. (PCI-DSS-v4.0)	cw-loggroup-retention-period-check	Ensure that an Amazon CloudWatch LogGroup retention period is set to greater than 365 days or else a specified retention period. The rule is NON_COMPLIANT if the retention period is less than MinRetentionTime, if specified, or else 365 days.
6.3.3	Security vulnerabilities are identified and addressed. (PCI-DSS-v4.0)	lambda-function-settings-check	Ensure that the AWS Lambda function settings for runtime, role, timeout, and memory size match the expected values. The rule ignores functions with the 'Image' package type and functions with runtime set to 'OS-only Runtime'. The rule is NON_COMPLIANT if the Lambda function settings do not match the expected values.

Control ID	Control Description	AWS Config Rule	Guidance
6.3.3	Security vulnerabilities are identified and addressed. (PCI-DSS-v4.0)	eks-cluster-oldest-supported-version	Ensure that an Amazon Elastic Kubernetes Service (EKS) cluster is not running the oldest supported version. The rule is NON_COMPLIANT if an EKS cluster is running oldest supported version (equal to the parameter 'oldestVersionSupported').
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-webacl-not-empty	Ensure that a WAFv2 Web ACL contains any WAF rules or WAF rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rules or WAF rule groups.
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-rulegroup-not-empty	Ensure that WAFv2 Rule Groups contain rules. The rule is NON_COMPLIANT if there are no rules in a WAFv2 Rule Group.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.1	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-webacl-not-empty	Ensure that a WAFv2 Web ACL contains any WAF rules or WAF rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rules or WAF rule groups.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	wafv2-rulegroup-not-empty	Ensure that WAFv2 Rule Groups contain rules. The rule is NON_COMPLIANT if there are no rules in a WAFv2 Rule Group.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.
6.4.2	Public-facing web applications are protected against attacks. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
6.5.5	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codedeploy-lambda-allatonce-traffic-shift-disabled	Ensure that the deployment group for Lambda Compute Platform is not using the default deployment configuration. The rule is NON_COMPLIANT if the deployment group is using the deployment configuration 'CodeDeployDefault.LambdaAllAtOnce'.

Control ID	Control Description	AWS Config Rule	Guidance
6.5.5	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codepipeline-deployment-count-check	Ensure that the first deployment stage of AWS CodePipeline performs at least one deployment. This is to monitor continuous deployment activity, ensuring regular updates and identifying inactive or underutilized pipelines, which can signal issues in the development or deployment process. Optionally ensure that each of the subsequent remaining stages deploy to more than the specified number of deployments (deploymentLimit).

Control ID	Control Description	AWS Config Rule	Guidance
6.5.6	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codedeploy-lambda-allatonce-traffic-shift-disabled	Ensure that the deployment group for Lambda Compute Platform is not using the default deployment configuration. The rule is NON_COMPLIANT if the deployment group is using the deployment configuration 'CodeDeployDefault.LambdaAllAtOnce'.

Control ID	Control Description	AWS Config Rule	Guidance
6.5.6	Changes to all system components are managed securely. (PCI-DSS-v4.0)	codepipeline-deployment-count-check	Ensure that the first deployment stage of AWS CodePipeline performs at least one deployment. This is to monitor continuous deployment activity, ensuring regular updates and identifying inactive or underutilized pipelines, which can signal issues in the development or deployment process. Optionally ensure that each of the subsequent remaining stages deploy to more than the specified number of deployments (deploymentLimit).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.2	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.
7.2.4	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.2.5	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.
7.2.5.1	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.6	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.2.6	Access to system components and data is appropriately defined and assigned. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.3.1	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.3.2	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
7.3.3	Access to system components and data is managed via an access control system(s). (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.
8.2.1	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.1	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.2	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.
8.2.4	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.4	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.5	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.2.5	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.2.6	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.2.7	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissions than the control Amazon S3 bucket policy that you provide.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-imdsv2-check	Ensure that your Amazon Elastic Compute Cloud (Amazon EC2) instance metadata version is configured with Instance Metadata Service Version 2 (IMDSv2). The rule is NON_COMPLIANT if the HttpTokens is set to optional.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	autoscaling-launchconfig-requires-imdsv2	Ensure that only IMDSv2 is enabled. This rule is NON_COMPLIANT if the Metadata version is not included in the launch configuration or if both Metadata V1 and V2 are enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.2.8	User identification and related accounts for users and administrators are strictly managed throughout an accounts lifecycle. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.3.10.1	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.11	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.
8.3.11	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	ec2-no-amazon-key-pair	Ensure that running Amazon Elastic Compute Cloud (EC2) instances are not launched using amazon key pairs. The rule is NON_COMPLIANT if a running EC2 instance is launched with a key pair.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	athena-workgroup-encrypted-at-rest	Ensure that an Amazon Athena workgroup is encrypted at rest. The rule is NON_COMPLIANT if encryption of data at rest is not enabled for an Athena workgroup.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-snapshot-encrypted	Ensure that an Amazon Neptune DB cluster has snapshots encrypted. The rule is NON_COMPLIANT if a Neptune cluster does not have snapshots encrypted.
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	redshift-cluster-kms-enabled	Ensure that Amazon Redshift clusters are using a specified AWS Key Management Service (AWS KMS) key for encryptio n. The rule is COMPLIANT if encryption is enabled and the cluster is encrypted with the key provided in the kmsKeyArn parameter. The rule is NON_COMPL IANT if the cluster is not encrypted or encrypted with another key.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	codebuild-project-artifact-encryption	Ensure that an AWS CodeBuild project has encryption enabled for all of its artifacts. The rule is NON_COMPLIANT if 'encryptionDisabled' is set to 'true' for any primary or secondary (if present) artifact configurations.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	codebuild-project-s3-logs-encrypted	Ensure that an AWS CodeBuild project configured with Amazon S3 Logs has encryption enabled for its logs. The rule is NON_COMPLIANT if'encryptionDisabled' is set to'true' in a S3LogsConfig of a CodeBuild project.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dax-encryption-enabled	Ensure that Amazon DynamoDB Accelerator (DAX) clusters are encrypted. The rule is NON_COMPLIANT if a DAX cluster is not encrypted.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dms-redis-tls-enabled	Ensure that AWS Database Migration Service (AWS DMS) endpoints for Redis data stores are enabled for TLS/SSL encryption of data communicated with other endpoints. The rule is NON_COMPLIANT if TLS/SSL encryption is not enabled.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	eks-secrets-encrypted	Ensure that Amazon Elastic Kubernetes Service clusters are configured to have Kubernetes secrets encrypted using AWS Key Management Service (KMS) keys.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	api-gw-cache-enabled-and-encrypted	Ensure that all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in an Amazon API Gateway stage is not configured to cache or the cache is not encrypted.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	docdb-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon DocumentDB (with MongoDB compatibility) clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dynamodb-table-encrypted-kms	Ensure that Amazon DynamoDB table is encrypted with AWS Key Management Service (KMS). The rule is NON_COMPLIANT if Amazon DynamoDB table is not encrypted with AWS KMS. The rule is also NON_COMPLIANT if the encrypted AWS KMS key is not present in kmsKeyArns input parameter.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dynamodb-table-encryption-enabled	Ensure that the Amazon DynamoDB tables are encrypted and checks their status. The rule is COMPLIANT if the status is enabled or enabling.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	cloudfront-no-deprecated-ssl-protocols	Ensure that CloudFront distributions are not using deprecated SSL protocols for HTTPS communication between CloudFront edge locations and custom origins. This rule is NON_COMPLIANT for a CloudFront distribution if any'OriginSslProtocols' includes'SSLv3'.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	cloudfront-traffic-to-origin-encrypted	Ensure that Amazon CloudFront distributions are encrypting traffic to custom origins. The rule is NON_COMPLIANT if'OriginProtocolPolicy' is'http-only' or if'OriginProtocolPolicy' is'match-viewer' and'ViewerProtocolPolicy' is'allow-all'.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	cloudfront-viewer-policy-https	Ensure that your Amazon CloudFront distributions use HTTPS (directly or via a redirection). The rule is NON_COMPLIANT if the value of ViewerProtocolPolicy is set to 'allow-all' for the DefaultCacheBehavior or for the CacheBehaviors.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	codebuild-project-envvar-awscred-check	Ensure that the project DOES NOT contain environment variables AWS_ACCESS_KEY_ID and AWS_SECRET_ACCESS_KEY. The rule is NON_COMPLIANT when the project environment variables contains plaintext credentials.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certificate Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Application Load Balancers and Network Load Balancers.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dax-tls-endpoint-encryption	Ensure that your Amazon DynamoDB Accelerator (DAX) cluster has ClusterEndpointEncryptionType set to TLS. The rule is NON_COMPLIANT if a DAX cluster is not encrypted by transport layer security (TLS).

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	eks-cluster-secrets-encrypted	Ensure that Amazon EKS clusters are not configured to have Kubernetes secrets encrypted using AWS KMS. The rule is NON_COMPLIANT if an EKS cluster does not have an encryptio nConfig resource or if encryptionConfig does not name secrets as a resource.
8.3.2	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	kinesis-stream-enc rypted	Ensure that Amazon Kinesis streams are encrypted at rest with server-side encryption. The rule is NON_COMPLIANT for a Kinesis stream if 'StreamEncryption' is not present.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	msk-in-cluster-node-require-tls	Ensure that an Amazon MSK cluster enforces encryption in transit using HTTPS (TLS) with the broker nodes of the cluster. The rule is NON_COMPLIANT if plain text communication is enabled for in-cluster broker node connections.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-encrypted	Ensure that storage encryption is enabled for your Amazon Neptune DB clusters. The rule is NON_COMPLIANT if storage encryption is not enabled.
8.3.2	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	dms-endpoint-ssl-configured	Ensure that AWS Database Migration Service (AWS DMS) endpoints are configured with an SSL connection. The rule is NON_COMPLIANT if AWS DMS does not have an SSL connection configured.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	s3-bucket-blacklisted-actions-prohibited	Ensure that an Amazon Simple Storage Service (Amazon S3) bucket policy does not allow blocklisted bucket-level and object-level actions on resources in the bucket for principals from other AWS accounts. For example, the rule checks that the Amazon S3 bucket policy does not allow another AWS account to perform any s3:GetBucket* actions and s3:DeleteObject on any object in the bucket. The rule is NON_COMPLIANT if any blocklisted actions are allowed by the Amazon S3 bucket policy.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	s3-bucket-policy-not-more-permissive	Ensure that your Amazon Simple Storage Service (S3) bucket policies do not allow other inter-account permissio ns than the control Amazon S3 bucket policy that you provide.
8.3.4	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	shield-drt-access	Ensure that the Shield Response Team (SRT) can access your AWS account. The rule is NON_COMPLIANT if AWS Shield Advanced is enabled but the role for SRT access is not configured.
8.3.4	Strong authentic ation for users and administrators is established and managed. (PCI-DSS-v4.0)	iam-policy-in-use	Ensure that an IAM policy ARN is attached to an IAM user, or a group with one or more IAM users, or an IAM role with one or more trusted entity.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	neptune-cluster-iam-database-authentication	Ensure that an Amazon Neptune cluster has AWS Identity and Access Management (IAM) database authentication enabled. The rule is NON_COMPLIANT if an Amazon Neptune cluster does not have IAM database authentication enabled.
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	rds-cluster-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) cluster has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS Cluster does not have IAM authentication enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	ec2-instance-profile-attached	Ensure that an EC2 instance has an AWS Identity and Access Management (IAM) profile attached to it. The rule is NON_COMPLIANT if no IAM profile is attached to the EC2 instance.
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
8.3.4	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	rds-instance-iam-authentication-enabled	Ensure that an Amazon Relational Database Service (Amazon RDS) instance has AWS Identity and Access Management (IAM) authentication enabled. The rule is NON_COMPLIANT if an Amazon RDS instance does not have IAM authentication enabled.
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.3.5	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.7	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccessKeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.
8.3.9	Strong authentication for users and administrators is established and managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.4.1	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
8.4.2	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.
8.4.3	Multi-factor authentication (MFA) is implemented to secure access into the CDE. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	access-keys-rotated	Ensure that active IAM access keys are rotated (changed) within the number of days specified in maxAccess KeyAge. The rule is NON_COMPLIANT if access keys are not rotated within the specified time period. The default value is 90 days.
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	secretsmanager-scheduled-rotation-success-check	Ensure that AWS Secrets Manager secrets rotated successfully according to the rotation schedule. Secrets Manager calculates the date the rotation should happen. The rule is NON_COMPLIANT if the date passes and the secret isn't rotated.

Control ID	Control Description	AWS Config Rule	Guidance
8.6.3	Use of application and system accounts and associated authentication factors is strictly managed. (PCI-DSS-v4.0)	secretsmanager-secret-periodic-rotation	Ensure that AWS Secrets Manager secrets have been rotated in the past specified number of days. The rule is NON_COMPLIANT if a secret has not been rotated for more than maxDaysSinceRotation number of days. The default value is 90 days.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A1.1.2	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	api-gw-endpoint-type-check	Ensure that Amazon API Gateway APIs are of the type specified in the rule parameter 'endpointConfigurationType'. The rule returns NON_COMPLIANT if the REST API does not match the endpoint type configured in the rule parameter.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	cloudfront-associated-with-waf	Ensure that Amazon CloudFront distributions are associated with either web application firewall (WAF) or WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT if a CloudFront distribution is not associated with a WAF web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	cloudfront-custom-ssl-certificate	Ensure that the certificate associated with an Amazon CloudFront distribution is not the default SSL certificate. The rule is NON_COMPLIANT if a CloudFront distribution uses the default SSL certificate.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	netfw-policy-default-action-fragment-packets	Ensure that an AWS Network Firewall policy is configured with a user defined stateless default action for fragmented packets. The rule is NON_COMPLIANT if stateless default action for fragmented packets does not match with user defined default action.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	rds-db-security-group-not-allowed	Ensure that the Amazon Relational Database Service (Amazon RDS) DB security groups is the default one. The rule is NON_COMPLIANT if there are any DB security groups that are not the default DB security group.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	ec2-transit-gateway-auto-vpc-attach-disabled	Ensure that Amazon Elastic Compute Cloud (Amazon EC2) Transit Gateways do not have 'AutoAcceptSharedAttachments' enabled. The rule is NON_COMPLIANT for a Transit Gateway if 'AutoAcceptSharedAttachments' is set to 'enable'.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	eks-endpoint-no-public-access	Ensure that the Amazon Elastic Kubernetes Service (Amazon EKS) endpoint is not publicly accessible. The rule is NON_COMPLIANT if the endpoint is publicly accessible.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	restricted-ssh	Note: For this rule, the rule identifie r (INCOMING _SSH_DISABLED) and rule name (restricted-ssh) are different. Ensure that the incoming SSH traffic for the security groups is accessible. The rule is COMPLIANT if the IP addresses of the incoming SSH traffic in the security groups are restricted (CIDR other than 0.0.0.0/0 or ::/0). Otherwise, NON_COMPLIANT.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	appsync-associated-with-waf	Ensure that AWS AppSync APIs are associated with AWS WAFv2 web access control lists (ACLs). The rule is NON_COMPLIANT for an AWS AppSync API if it is not associated with a web ACL.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	codebuild-project-source-repo-url-check	Ensure that the Bitbucket source repository URL DOES NOT contain sign-in credentials or not. The rule is NON_COMPLIANT if the URL contains any sign-in information and COMPLIANT if it doesn't.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	elb-acm-certificate-required	Ensure that the Classic Load Balancers use SSL certificates provided by AWS Certifica te Manager. To use this rule, use an SSL or HTTPS listener with your Classic Load Balancer. Note - this rule is only applicable to Classic Load Balancers. This rule does not check Applicati on Load Balancers and Network Load Balancers.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	emr-block-public-a ccess	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurit yGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGrou pRuleRanges.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	nacl-no-unrestricted-ssh-rdp	Ensure that default ports for SSH/RDP ingress traffic for network access control lists (NACLs) are restricted. The rule is NON_COMPLIANT if a NACL inbound entry allows a source TCP or UDP CIDR block for ports 22 or 3389.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	waf-global-webacl-not-empty	Ensure that a WAF Global Web ACL contains some WAF rules or rule groups. This rule is NON_COMPLIANT if a Web ACL does not contain any WAF rule or rule group.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	waf-global-rulegroup-not-empty	Ensure that an AWS WAF Classic rule group contains some rules. The rule is NON_COMPLIANT if there are no rules present within a rule group.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	waf-global-rule-not-empty	Ensure that an AWS WAF global rule contains some conditions. The rule is NON_COMPLIANT if no conditions are present within the WAF global rule.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	ec2-client-vpn-not-authorize-all	Ensure that the AWS Client VPN authorization rules does not authorize connection access for all clients. The rule is NON_COMPLIANT if 'AccessAll' is present and set to true.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	internet-gateway-authorized-vpc-only	Ensure that internet gateways are attached to an authorized virtual private cloud (Amazon VPC). The rule is NON_COMPLIANT if internet gateways are attached to an unauthorized VPC.

Control ID	Control Description	AWS Config Rule	Guidance
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
A1.1.3	Multi-tenant service providers protect and separate all customer environments and data. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	api-gwv2-access-logs-enabled	Ensure that Amazon API Gateway V2 stages have access logging enabled. The rule is NON_COMPLIANT if 'accessLogSettings' is not present in Stage configuration.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	cloudfront-accesslogs-enabled	Ensure that Amazon CloudFront distributions are configured to deliver access logs to an Amazon S3 bucket. The rule is NON_COMPLIANT if a CloudFront distribution does not have logging configured.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	cloudtrail-security-trail-enabled	Ensure that there is at least one AWS CloudTrail trail defined with security best practices. This rule is COMPLIANT if there is at least one trail that meets all of the following:

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	neptune-cluster-cloudwatch-log-export-enabled	Ensure that an Amazon Neptune cluster has CloudWatch log export enabled for audit logs. The rule is NON_COMPLIANT if a Neptune cluster does not have CloudWatch log export enabled for audit logs.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	ecs-task-definition-log-configuration	Ensure that logConfiguration is set on active ECS Task Definitions. This rule is NON_COMPLIANT if an active ECSTaskDefinition does not have the logConfiguration resource defined or the value for logConfiguration is null in at least one container definition.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	cloudtrail-enabled	Note: For this rule, the rule identifier (CLOUD_TRAIL_ENABLED) and rule name (cloudtrail-enabled) are different. Ensure that an AWS CloudTrail trail is enabled in your AWS account. The rule is NON_COMPLIANT if a trail is not enabled. Optionally, the rule checks a specific S3 bucket, Amazon Simple Notification Service (Amazon SNS) topic, and CloudWatch log group.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	multi-region-cloudtrail-enabled	Note: for this rule, the rule identifier (MULTI_REGION_CLOUD_TRAIL_ENABLED) and rule name (multi-region-cloudtrail-enabled) are different. Ensure that there is at least one multi-region AWS CloudTrail. The rule is NON_COMPLIANT if the trails do not match input parameters. The rule is NON_COMPLIANT if the ExcludeManagementEventSources field is not empty or if AWS CloudTrail is configured to exclude management events such as AWS KMS events or Amazon RDS Data API events.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	appsync-logging-enabled	Ensure that an AWS AppSync API has logging enabled. The rule is NON_COMPLIANT if logging is not enabled, or 'fieldLogLevel' is neither ERROR nor ALL.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	waf-classic-logging-enabled	Ensure that logging is enabled on AWS WAF classic global web access control lists (web ACLs). The rule is NON_COMPLIANT for a global web ACL, if it does not have logging enabled.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	mq-cloudwatch-audit-logging-enabled	Ensure that Amazon MQ brokers have Amazon CloudWatch audit logging enabled. The rule is NON_COMPLIANT if a broker does not have audit logging enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	mq-cloudwatch-audit-log-enabled	Ensure that an Amazon MQ broker has CloudWatch audit logging enabled. The rule is NON_COMPLIANT if the broker does not have audit logging enabled.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	eks-cluster-logging-enabled	Ensure that an Amazon Elastic Kubernetes Service (Amazon EKS) cluster is configured with logging enabled. The rule is NON_COMPLIANT if logging for Amazon EKS clusters is not enabled for all log types.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	elastic-beanstalk-logs-to-cloudwatch	Ensure that AWS Elastic Beanstalk environments are configured to send logs to Amazon CloudWatch Logs. The rule is NON_COMPLIANT if the value of `StreamLogs` is false.

Control ID	Control Description	AWS Config Rule	Guidance
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	step-functions-state-machine-logging-enabled	Ensure that AWS Step Functions machine has logging enabled. The rule is NON_COMPLIANT if a state machine does not have logging enabled or the logging configuration is not at the minimum level provided.
A1.2.1	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	netfw-logging-enabled	Ensure that AWS Network Firewall firewalls have logging enabled. The rule is NON_COMPLIANT if a logging type is not configured. You can specify which logging type you want the rule to check.
A1.2.3	Multi-tenant service providers facilitate logging and incident response for all customers. (PCI-DSS-v4.0)	security-account-information-provided	Ensure that you have provided security contact information for your AWS account contacts. The rule is NON_COMPLIANT if security contact information within the account is not provided.

Control ID	Control Description	AWS Config Rule	Guidance
A3.2.5.1	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-auto-sensitive-data-discovery-check	Ensure that automated sensitive data discovery is enabled for Amazon Macie. The rule is NON_COMPLIANT if automated sensitive data discovery is disabled. The rule is APPLICABLE for administrator accounts and NOT_APPLICABLE for member accounts.
A3.2.5.1	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-status-check	Ensure that Amazon Macie is enabled in your account per region. The rule is NON_COMPLIANT if the 'status' attribute is not set to 'ENABLED'.

Control ID	Control Description	AWS Config Rule	Guidance
A3.2.5.2	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-auto-sensitive-data-discovery-check	Ensure that automated sensitive data discovery is enabled for Amazon Macie. The rule is NON_COMPLIANT if automated sensitive data discovery is disabled. The rule is APPLICABLE for administrator accounts and NOT_APPLICABLE for member accounts.
A3.2.5.2	PCI DSS scope is documented and validated. (PCI-DSS-v4.0)	macie-status-check	Ensure that Amazon Macie is enabled in your account per region. The rule is NON_COMPLIANT if the 'status' attribute is not set to 'ENABLED'.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
A3.3.1	PCI DSS is incorporated into business-as-usual (BAU) activities. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	neptune-cluster-snapshot-public-prohibited	Ensure that an Amazon Neptune manual DB cluster snapshot is not public. The rule is NON_COMPLIANT if any existing and new Neptune cluster snapshot is public.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	docdb-cluster-snapshot-public-prohibited	Ensure that Amazon DocumentDB manual cluster snapshots are not public. The rule is NON_COMPLIANT if any Amazon DocumentDB manual cluster snapshots are public.

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	backup-recovery-point-manual-deletion-disabled	Ensure that a backup vault has an attached resource-based policy which prevents deletion of recovery points. The rule is NON_COMPLIANT if the Backup Vault does not have resource-based policies or has policies without a suitable 'Deny' statement (statement with backup:DeleteRecoveryPoint, backup:UpdateRecoveryPointLifecycle, and backup:PutBackupVaultAccessPolicy permissions).

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	emr-block-public-access	Ensure that an account with Amazon EMR has block public access settings enabled. The rule is NON_COMPLIANT if BlockPublicSecurityGroupRules is false, or if true, ports other than Port 22 are listed in Permitted PublicSecurityGroupRuleRanges.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	secretsmanager-secret-unused	Ensure that AWS Secrets Manager secrets have been accessed within a specified number of days. The rule is NON_COMPLIANT if a secret has not been accessed in 'unusedForDays' number of days. The default value is 90 days.

Control ID	Control Description	AWS Config Rule	Guidance
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-access-point-public-access-blocks	Ensure that Amazon S3 access points have block public access settings enabled. The rule is NON_COMPLIANT if block public access settings are not enabled for S3 access points.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-account-level-public-access-blocks	Ensure that the required public access block settings are configured from account level. The rule is only NON_COMPLIANT when the fields set below do not match the corresponding fields in the configuration item.
A3.4.1	Logical access to the cardholder data environment is controlled and managed. (PCI-DSS-v4.0)	s3-bucket-mfa-delete-enabled	Ensure that MFA Delete is enabled in the Amazon Simple Storage Service (Amazon S3) bucket versioning configuration. The rule is NON_COMPLIANT if MFA Delete is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	api-gw-xray-enabled	Ensure that AWS X-Ray tracing is enabled on Amazon API Gateway REST APIs. The rule is COMPLIANT if X-Ray tracing is enabled and NON_COMPLIANT otherwise.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudformation-stack-notification-check	Ensure that your CloudFormation stacks send event notifications to an Amazon SNS topic. Optionally ensure that specified Amazon SNS topics are used. The rule is NON_COMPLIANT if CloudFormation stacks do not send notifications.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	ec2-instance-detailed-monitoring-enabled	Ensure that detailed monitoring is enabled for EC2 instances. The rule is NON_COMPLIANT if detailed monitoring is not enabled.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-action-check	Ensure that CloudWatch alarms have an action configured for the ALARM, INSUFFICIENT_DATA, or OK state. Optionally ensure that any actions match a named ARN. The rule is NON_COMPLIANT if there is no action specified for the alarm or optional parameter.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-resource-check	Ensure that a resource type has a CloudWatch alarm for the named metric. For resource type, you can specify EBS volumes, EC2 instances, Amazon RDS clusters, or S3 buckets. The rule is COMPLIANT if the named metric has a resource ID and CloudWatch alarm.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	cloudwatch-alarm-settings-check	Ensure that CloudWatch alarms with the given metric name have the specified settings.
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	wafv2-rulegroup-logging-enabled	Ensure that Amazon CloudWatch security metrics collection on AWS WAFv2 rule groups is enabled. The rule is NON_COMPLIANT if the 'VisibilityConfig.CloudWatchMetricsEnabled' field is set to false.

Control ID	Control Description	AWS Config Rule	Guidance
A3.5.1	Suspicious events are identified and responded to. (PCI-DSS-v4.0)	sns-topic-message-delivery-notification-enabled	Ensure that Amazon Simple Notification Service (SNS) logging is enabled for the delivery status of notification messages sent to a topic for the endpoints. The rule is NON_COMPLIANT if the delivery status notification for messages is not enabled.

Template

The template is available on GitHub: Operational Best Practices for PCI DSS 4.0 (Including global resource types).

Operational Best Practices for Publicly Accessible Resources

This conformance pack helps identify resources that may be publicly accessible.

For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Publicly Accessible Resources.

Operational Best Practices for RBI Cyber Security Framework for UCBs

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard.

You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Reserve Bank of India (RBI) Cyber Security Framework for Urban Cooperative Banks (UCBs) and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more RBI Cyber Security Framework for UCBs controls. An RBI Cyber Security Framework for UCBs control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
Annex_I(1.1)	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
Annex_I(1.1)	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant. The lack of centralized account governance may lead to inconsistent account configurations, which

Control ID	AWS Config Rule	Guidance
		may expose resources and sensitive data.
Annex_I(1.1)	ecr-private-tag-immutability-enabled	Enable Elastic Container Repository (ECR) Tag Immutability to prevent image tags on your ECR images from being overwritt en. Previously, tags could be overwritten requiring manual methodologies to uniquely identify an image.
Annex_I(1.3)	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired . This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
Annex_I(1.3)	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configure d to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
Annex_I(1.3)	api-gw-cache-enabled-and-encrypted	To help protect data at rest, ensure encryption is enabled for your API Gateway stage's cache. Because sensitive data can be captured for the API method, enable encryption at rest to help protect that data.
Annex_I(1.3)	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
Annex_I(1.3)	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Annex_I(1.3)	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.
Annex_I(1.3)	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
Annex_I(1.3)	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	backup-recovery-point-encrypted	Ensure that encryption is enabled for your AWS Backup recovery points. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Annex_I(1.3)	codebuild-project-artifact-encryption	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild artifacts.
Annex_I(1.3)	codebuild-project-s3-logs-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your AWS CodeBuild logs stored in Amazon S3.
Annex_I(1.3)	opensearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service domains.
Annex_I(1.3)	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	opensearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communications within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.
Annex_I(1.3)	dynamodb-table-encrypted-kms	Ensure that encryption is enabled for your Amazon DynamoDB tables. Because sensitive data can exist at rest in these tables, enable encryption at rest to help protect that data. By default, DynamoDB tables are encrypted with an AWS owned customer master key (CMK).
Annex_I(1.3)	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
Annex_I(1.3)	elasticsearch-encrypted-at-rest	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon OpenSearch Service (OpenSearch Service) domains.
Annex_I(1.3)	elasticsearch-node-to-node-encryption-check	Ensure node-to-node encryption for Amazon OpenSearch Service is enabled. Node-to-node encryption enables TLS 1.2 encryption for all communica tions within the Amazon Virtual Private Cloud (Amazon VPC). Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryptio n is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
Annex_I(1.3)	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configure d with SSL or HTTPS listeners . Because sensitive data can exist, enable encryption in transit to help protect that data.
Annex_I(1.3)	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
Annex_I(1.3)	rds-snapshot-encrypted	Ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) snapshots. Because sensitive data can exist at rest, enable encryption at rest to help protect that data.
Annex_I(1.3)	rds-storage-encrypted	To help protect data at rest, ensure that encryption is enabled for your Amazon Relational Database Service (Amazon RDS) instances. Because sensitive data can exist at rest in Amazon RDS instances, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.
Annex_I(1.3)	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
Annex_I(1.3)	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
Annex_I(1.3)	sagemaker-endpoint-configuration-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker endpoint. Because sensitive data can exist at rest in SageMaker endpoint, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	sagemaker-notebook-instance-kms-key-configured	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your SageMaker notebook. Because sensitive data can exist at rest in SageMaker notebook, enable encryptio n at rest to help protect that data.
Annex_I(1.3)	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.
Annex_I(1.3)	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorable. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
Annex_I(1.3)	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.
Annex_I(1.3)	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
Annex_I(1.3)	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	autoscaling-launch-config-public-ip-disabled	If you configure your Network Interfaces with a public IP address, then the associated resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessible, as this may allow unintended access to your applications or servers.
Annex_I(1.3)	no-unrestricted-route-to-igw	Ensure Amazon EC2 route tables do not have unrestricted routes to an internet gateway. Removing or limiting the access to the internet for workloads within Amazon VPCs can reduce unintended access within your environment.
Annex_I(1.3)	redshift-cluster-kms-enabled	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for your Amazon Redshift cluster. Because sensitive data can exist at rest in Redshift clusters, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
Annex_I(1.3)	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.
Annex_I(1.3)	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
Annex_I(1.3)	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communication between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
Annex_I(1.3)	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.
Annex_I(1.3)	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.
Annex_I(1.3)	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.
Annex_I(1.3)	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
Annex_I(1.3)	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
Annex_I(1.3)	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventing direct internet access, you can keep sensitive data from being accessed by unauthorized users.
Annex_I(5.1)	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	AWS Config Rule	Guidance
Annex_I(5.1)	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
Annex_I(5.1)	waf-regional-rule-not-empty	Ensure your AWS WAF has a rule that is not empty. A rule with no conditions could result in unintended behavior.
Annex_I(5.1)	waf-regional-rulegroup-not-empty	Ensure your AWS WAF has a rule group that is not empty. A rule group that is empty could result in unintended behavior.
Annex_I(5.1)	waf-regional-webacl-not-empty	A Web ACL attached to an AWS WAF can contain a collection of rules and rule groups to inspect and control web requests. If a Web ACL is empty, the web traffic passes without being detected or acted upon by the WAF.

Control ID	AWS Config Rule	Guidance
Annex_I(5.1)	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.
Annex_I(5.1)	api-gw-associated-with-waf	AWS WAF enables you to configure a set of rules (called a web access control list (web ACL)) that allow, block, or count web requests based on customizable web security rules and conditions that you define. Ensure your Amazon API Gateway stage is associated with a WAF Web ACL to protect it from malicious attacks

Control ID	AWS Config Rule	Guidance
Annex_I(5.1)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Annex_I(5.1)	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,3389,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Annex_I(6)	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.
Annex_I(6)	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	AWS Config Rule	Guidance
Annex_I(6)	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.
Annex_I(6)	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	AWS Config Rule	Guidance
Annex_I(6)	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relationa l Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.
Annex_I(6)	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferredMaintenanceWindow (the default is sat:16:00-sat:16:30), and the automatedSnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Annex_I(6)	vuln-management-plan-exists (process check)	Ensure a vulnerability management plan is developed and implemented in order to have a formally defined processes to address vulnerabilities in your environment.
Annex_I(7.1)	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
Annex_I(7.1)	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
Annex_I(7.1)	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
Annex_I(7.1)	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
Annex_I(7.1)	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.

Control ID	AWS Config Rule	Guidance
Annex_I(7.2)	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
Annex_I(7.3)	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
Annex_I(7.4)	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.
Annex_I(7.4)	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
Annex_I(7.4)	cloudtrail-s3-dataevents-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.
Annex_I(7.4)	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.
Annex_I(7.4)	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.
Annex_I(7.4)	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed information about your build project.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	opensearch-audit-logging-enabled	Ensure audit logging is enabled on your Amazon OpenSearch Service domains. Audit logging allows you to track user activity on your OpenSearch domains, including authentication successes and failures, requests to OpenSearch, index changes, and incoming search queries.
Annex_I(7.4)	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
Annex_I(7.4)	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.
Annex_I(7.4)	rds-logging-enabled	To help with logging and monitoring within your environment, ensure Amazon Relational Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connections, disconnections, queries, or tables queried.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.
Annex_I(7.4)	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	AWS Config Rule	Guidance
Annex_I(7.4)	wafv2-logging-enabled	To help with logging and monitoring within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, informati on about the request, and an action for the rule that each request matched.
Annex_I(7.4)	redshift-cluster-configurat ion-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activitie s in the database. This rule requires that a value is set for clusterDbEncrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
Annex_I(10.2)	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organizat ion from various security breaches or incidents.
Annex_I(12)	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.
Annex_I(12)	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.
Annex_I(12)	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Annex_I(12)	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.
Annex_I(12)	redshift-backup-enabled	To help with data backup processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
Annex_I(12)	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	AWS Config Rule	Guidance
Annex_I(12)	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Template

The template is available on GitHub: Operational Best Practices for RBI Cyber Security Framework for UCBs.

Operational Best Practices for RBI MD-ITF

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates, are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the Reserve Bank of India (RBI) Master Direction – Information Technology Framework and AWS managed Config rules. Each Config rule applies to a specific AWS resource, and relates to one or more RBI Master Direction – Information Technology Framework controls. An RBI Master Direction – Information Technology Framework control can be related to multiple Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(a)	Identification and Classification of Information Assets.	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
3.1(a)	Identification and Classification of Information Assets.	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for

Control ID	Control Description	AWS Config Rule	Guidance
			more than the allowed number of days, according to your organization's standards.
3.1(a)	Identification and Classification of Information Assets.	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functionality.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(a)	Identification and Classification of Information Assets.	ecr-private-tag-immutability-enabled	Enable Elastic Container Repository (ECR) Tag Immutability to prevent image tags on your ECR images from being overwritten. Previously, tags could be overwritten requiring manual methodologies to uniquely identify an image.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
3.1(c)	Role Based Access Control	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.
3.1(c)	Role Based Access Control	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
3.1(c)	Role Based Access Control	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
3.1(c)	Role Based Access Control	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
3.1(c)	Role Based Access Control	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
3.1(c)	Role Based Access Control	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(c)	Role Based Access Control	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(g)	Incident Management	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(g)	Incident Management	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.
3.1(g)	Incident Management	alb-waf-enabled	Ensure AWS WAF is enabled on Elastic Load Balancers (ELB) to help protect web applications. A WAF helps to protect your web applications or APIs against common web exploits. These web exploits may affect availability, compromise security, or consume excessive resources within your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(g)	Incident Management	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connectio ns, devices, and software. AWS Security Hub aggregates, organizes , and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(g)	Incident Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
3.1(h)	Trails	api-gw-execution-logging-enabled	API Gateway logging displays detailed views of users who accessed the API and the way they accessed the API. This insight enables visibility of user activities.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
3.1(h)	Trails	codebuild-project-logging-enabled	Ensure AWS CodeBuild project logging is enabled so that your build output logs are sent to either Amazon CloudWatch or Amazon Simple Storage Service (Amazon S3). Build output logs provide detailed informati on about your build project.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	opensearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. OpenSearch Service error logs can assist with security and access audits, and can help to diagnose availability issues.
3.1(h)	Trails	redshift-audit-logging-enabled	To capture information about connections and user activities on your Amazon Redshift cluster, ensure audit logging is enabled.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	cloudtrail-enabled	AWS CloudTrail can help in non-repud iation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated , and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.
3.1(h)	Trails	cloudtrail-s3-data events-enabled	The collection of Simple Storage Service (Amazon S3) data events helps in detecting any anomalous activity. The details include AWS account information that accessed an Amazon S3 bucket, IP address, and time of event.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	cw-loggroup-retention-period-check	Ensure a minimum duration of event log data is retained for your log groups to help with troubleshooting and forensics investigations. The lack of available past event log data makes it difficult to reconstruct and identify potentially malicious events.
3.1(h)	Trails	elasticsearch-logs-to-cloudwatch	Ensure Amazon OpenSearch Service domains have error logs enabled and streamed to Amazon CloudWatch Logs for retention and response. Domain error logs can assist with security and access audits, and can help to diagnose availability issues.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	elb-logging-enabled	Elastic Load Balancing activity is a central point of communication within an environment. Ensure ELB logging is enabled. The collected data provides detailed information about requests sent to the ELB. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	multi-region-cloudtrail-enabled	AWS CloudTrail records AWS Management Console actions and API calls. You can identify which users and accounts called AWS, the source IP address from where the calls were made, and when the calls occurred. CloudTrail will deliver log files from all AWS Regions to your S3 bucket if MULTI_REGION_CLOUD_TRAIL_ENABLED is enabled. Additionally, when AWS launches a new Region, CloudTrail will create the same trail in the new Region. As a result, you will receive log files containing API activity for the new Region without taking any action.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	rds-logging-enabled	To help with logging and monitorin g within your environment, ensure Amazon Relationa l Database Service (Amazon RDS) logging is enabled. With Amazon RDS logging, you can capture events such as connectio ns, disconnections, queries, or tables queried.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for information about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	wafv2-logging-enabled	To help with logging and monitorin g within your environment, enable AWS WAF (V2) logging on regional and global web ACLs. AWS WAF logging provides detailed information about the traffic that is analyzed by your web ACL. The logs record the time that AWS WAF received the request from your AWS resource, information about the request, and an action for the rule that each request matched.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(h)	Trails	redshift-cluster-configuration-check	To protect data at rest, ensure that encryption is enabled for your Amazon Redshift clusters. You must also ensure that required configurations are deployed on Amazon Redshift clusters. The audit logging should be enabled to provide information about connections and user activities in the database. This rule requires that a value is set for clusterDb Encrypted (Config Default : TRUE), and loggingEnabled (Config Default: TRUE). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(i)	Public Key Infrastructure	acm-certificate-expiration-check	Ensure network integrity is protected by ensuring X509 certificates are issued by AWS ACM. These certificates must be valid and unexpired. This rule requires a value for daysToExpiration (AWS Foundational Security Best Practices value: 90). The actual value should reflect your organization's policies.
3.1(i)	Public Key Infrastructure	alb-http-drop-invalid-header-enabled	Ensure that your Elastic Load Balancers (ELB) are configured to drop http headers. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(i)	Public Key Infrastructure	alb-http-to-https-redirection-check	To help protect data in transit, ensure that your Application Load Balancer automatically redirects unencrypted HTTP requests to HTTPS. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1(i)	Public Key Infrastructure	api-gw-ssl-enabled	Ensure Amazon API Gateway REST API stages are configured with SSL certificates to allow backend systems to authenticate that requests originate from API Gateway.
3.1(i)	Public Key Infrastructure	opensearch-https-required	Because sensitive data can exist and to help protect data in transit, ensure HTTPS is enabled for connections to your Amazon OpenSearch Service domains.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(i)	Public Key Infrastructure	elbv2-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.
3.1(i)	Public Key Infrastructure	elb-acm-certificate-required	Because sensitive data can exist and to help protect data at transit, ensure encryption is enabled for your Elastic Load Balancing. Use AWS Certificate Manager to manage, provision and deploy public and private SSL/TLS certificates with AWS services and internal resources.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(i)	Public Key Infrastructure	elb-tls-https-listeners-only	Ensure that your Elastic Load Balancers (ELBs) are configured with SSL or HTTPS listeners. Because sensitive data can exist, enable encryption in transit to help protect that data.
3.1(i)	Public Key Infrastructure	redshift-require-tls-ssl	Ensure that your Amazon Redshift clusters require TLS/SSL encryption to connect to SQL clients. Because sensitive data can exist, enable encryption in transit to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
3.1(i)	Public Key Infrastructure	s3-bucket-ssl-requests-only	To help protect data in transit, ensure that your Amazon Simple Storage Service (Amazon S3) buckets require requests to use Secure Socket Layer (SSL). Because sensitive data can exist, enable encryption in transit to help protect that data.
3.3	Vulnerability Management	elastic-beanstalk-managed-updates-enabled	Enabling managed platform updates for an Amazon Elastic Beanstalk environment ensures that the latest available platform fixes, updates, and features for the environment are installed. Keeping up to date with patch installation is a best practice in securing systems.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	rds-automatic-minor-version-upgrade-enabled	Enable automatic minor version upgrades on your Amazon Relational Database Service (RDS) instances to ensure the latest minor version updates to the Relational Database Management System (RDBMS) are installed, which may include security patches and bug fixes.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	redshift-cluster-maintenancesettings-check	This rule ensures that Amazon Redshift clusters have the preferred settings for your organization. Specifically, that they have preferred maintenance windows and automated snapshot retention periods for the database. This rule requires you to set the allowVersionUpgrade. The default is true. It also lets you optionally set the preferred MaintenanceWindow (the default is sat:16:00-sat:16:30), and the automated SnapshotRetentionPeriod (the default is 1). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.3	Vulnerability Management	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Cyber Crisis Management Plan	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Cyber Crisis Management Plan	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Cyber Crisis Management Plan	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Cyber Crisis Management Plan	ec2-managedinstance-association-compliance-status-check	Use AWS Systems Manager Associations to help with inventory of software platforms and applications within an organization. AWS Systems Manager assigns a configuration state to your managed instances and allows you to set baselines of operating system patch levels, software installations, application configurations, and other details about your environment.

Control ID	Control Description	AWS Config Rule	Guidance
3.5	Cyber Crisis Management Plan	ec2-managedinstance-patch-compliance-status-check	Enable this rule to help with identification and documentation of Amazon Elastic Compute Cloud (Amazon EC2) vulnerabilities. The rule checks if Amazon EC2 instance patch compliance in AWS Systems Manager as required by your organization's policies and procedures.
3.9	IT Risk Assessment	annual-risk-assessment-performed (process check)	Perform an annual risk assessment on your organization. Risk assessments can assist in determining the likelihood and impact of identified risks and/or vulnerabilities affecting an organization.

Control ID	Control Description	AWS Config Rule	Guidance
3.12	Training	security-awareness-program-exists (process check)	Establish and maintain a security awareness program for your organization. Security awareness programs educate employees on how to protect their organization from various security breaches or incidents.
4.4(g)	Fraud analysis-Suspicious transaction analysis, embezzlement, theft or suspected money-laundering, misappropriation of assets, manipulation of financial records etc. The regulatory requirement of reporting fraud to RBI should be system driven.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
4.4(h)	Capacity and performance analysis of IT security systems.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	clb-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
4.4(h)	Capacity and performance analysis of IT security systems.	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	lambda-vpc-multi-az-check	If your AWS Lambda function is configure d to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availability Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.
4.4(h)	Capacity and performance analysis of IT security systems.	rds-instance-delet ion-protection-ena bled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	s3-bucket-default-lock-enabled	Ensure that your Amazon Simple Storage Service (Amazon S3) bucket has lock enabled, by default. Because sensitive data can exist at rest in S3 buckets, enforce object locks at rest to help protect that data.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
4.4(h)	Capacity and performance analysis of IT security systems.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.
4.4(h)	Capacity and performance analysis of IT security systems.	lambda-dlq-check	Enable this rule to help notify the appropriate personnel through Amazon Simple Queue Service (Amazon SQS) or Amazon Simple Notification Service (Amazon SNS) when a function has failed.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	beanstalk-enhanced-health-reporting-enabled	AWS Elastic Beanstalk enhanced health reporting enables a more rapid response to changes in the health of the underlying infrastructure. These changes could result in a lack of availability of the application. Elastic Beanstalk enhanced health reporting provides a status descriptor to gauge the severity of the identified issues and identify possible causes to investigate.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(h)	Capacity and performance analysis of IT security systems.	ebs-optimized-instance	An optimized instance in Amazon Elastic Block Store (Amazon EBS) provides additional, dedicated capacity for Amazon EBS I/O operations. This optimization provides the most efficient performance for your EBS volumes by minimizing contention between Amazon EBS I/O operations and other traffic from your instance.
4.4(h)	Capacity and performance analysis of IT security systems.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(i)	Incident reporting , their impact and steps taken for non -recurrence of such events in the future.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpecte d, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
4.4(i)	Incident reporting, their impact and steps taken for non-recurrence of such events in the future.	guardduty-non-archived-findings	Amazon GuardDuty helps you understand the impact of an incident by classifying findings by severity: low, medium, and high. You can use these classifications for determining remediation strategies and priorities. This rule allows you to optionally set the daysLowSev (Config Default: 30), daysMediumSev (Config Default: 7), and daysHighSev (Config Default: 1) for non-archived findings, as required by your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	aurora-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Aurora resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	cmk-backing-key-rotation-enabled	Enable key rotation to ensure that keys are rotated after they have reached the end of their crypto period.
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	ec2-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Compute Cloud (Amazon EC2) resources are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	fsx-resources-protected-by-backup-plan	To help with data back-up processes, ensure your Amazon FSx file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
6.3	NBFCs shall consider the need to put in place necessary backup sites for their critical business systems and Data centers.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	dynamodb-autoscaling-enabled	Amazon DynamoDB auto scaling uses the AWS Application Auto Scaling service to adjust provisioned throughput capacity that automatically responds to actual traffic patterns. This enables a table or a global secondary index to increase its provisioned read/write capacity to handle sudden increases in traffic, without throttling.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	elb-cross-zone-load-balancing-enabled	Enable cross-zone load balancing for your Elastic Load Balancers (ELBs) to help maintain adequate capacity and availability. The cross-zone load balancing reduces the need to maintain equivalent numbers of instances in each enabled availability zone. It also improves your application's ability to handle the loss of one or more instances.
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	elb-deletion-protection-enabled	This rule ensures that Elastic Load Balancing has deletion protection enabled. Use this feature to prevent your load balancer from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	clb-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	elbv2-multiple-az	Elastic Load Balancing (ELB) automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in an availability zone. To ensure high availability, ensure your ELB has registered instances from multiple Availability Zones.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	lambda-vpc-multi-az-check	If your AWS Lambda function is configure d to connect to a virtual private cloud (VPC) in your account, deploy the AWS Lambda function in at least two different Availability Zones to ensure that it is your function is available to process events in case of a service interruption in a single zone.
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	rds-instance-deletion-protection-enabled	Ensure Amazon Relational Database Service (Amazon RDS) instances have deletion protectio n enabled. Use deletion protection to prevent your Amazon RDS instances from being accidentally or maliciously deleted, which can lead to loss of availability for your applications.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	rds-multi-az-support	Multi-AZ support in Amazon Relationa l Database Service (Amazon RDS) provides enhanced availability and durability for database instances. When you provision a Multi-AZ database instance, Amazon RDS automatically creates a primary database instance, and synchronously replicates the data to a standby instance in a different Availabil ity Zone. Each Availability Zone runs on its own physicall y distinct, independe nt infrastructure, and is engineered to be highly reliable. In case of an infrastru cture failure, Amazon RDS performs an automatic failover to the standby so that you can resume database operation s as soon as the failover is complete.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	vpc-vpn-2-tunnels-up	Redundant Site-to-Site VPN tunnels can be implemented to achieve resilience requirements. It uses two tunnels to help ensure connectivity in case one of the Site-to-Site VPN connections becomes unavailable. To protect against a loss of connectivity, in case your customer gateway becomes unavailable, you can set up a second Site-to-Site VPN connection to your Amazon Virtual Private Cloud (Amazon VPC) and virtual private gateway by using a second customer gateway.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	autoscaling-group-elb-healthcheck-required	The Elastic Load Balancer (ELB) health checks for Amazon Elastic Compute Cloud (Amazon EC2) Auto Scaling groups support maintenance of adequate capacity and availability. The load balancer periodically sends pings, attempts connections, or sends requests to test Amazon EC2 instances health in an auto-scaling group. If an instance is not reporting back, traffic is sent to a new Amazon EC2 instance.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	dynamodb-throughput-limit-check	Enable this rule to ensure that provisioned throughput capacity is checked on your Amazon DynamoDB tables. This is the amount of read/write activity that each table can support. DynamoDB uses this information to reserve sufficient system resources to meet your throughput requirements. This rule generates an alert when the throughput approaches the maximum limit for a customer's account. This rule allows you to optionally set accountRCUThresholdPercentage (Config Default: 80) and accountWCUThresholdPercentage (Config Default: 80) parameters. The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	guardduty-enabled-centralized	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intelligence feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	lambda-concurrency-check	This rule ensures that a Lambda function's concurrency high and low limits are established. This can assist in baselining the number of requests that your function is serving at any given time.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	rds-enhanced-monitoring-enabled	Enable Amazon Relational Database Service (Amazon RDS) to help monitor Amazon RDS availability. This provides detailed visibility into the health of your Amazon RDS database instances. When the Amazon RDS storage is using more than one underlying physical device, Enhanced Monitoring collects the data for each device. Also, when the Amazon RDS database instance is running in a Multi-AZ deployment, the data for each device on the secondary host is collected, and the secondary host metrics.

Control ID	Control Description	AWS Config Rule	Guidance
8.1	IT Systems should be progressively scaled up as the size and complexity of NBFC's operations increases.	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	dms-replication-not-public	Manage access to the AWS Cloud by ensuring DMS replication instances cannot be publicly accessed. DMS replication instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ebs-snapshot-public-restorable-check	Manage access to the AWS Cloud by ensuring EBS snapshots are not publicly restorabl e. EBS volume snapshots can contain sensitive information and access control is required for such accounts.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	elasticsearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service (OpenSearch Service) Domains are within an Amazon Virtual Private Cloud (Amazon VPC). An OpenSearch Service domain within an Amazon VPC enables secure communication between OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	emr-master-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon EMR cluster master nodes cannot be publicly accessed. Amazon EMR cluster master nodes can contain sensitive information and access control is required for such accounts.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communica tion between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints . Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorized Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthorized access to Amazon VPC resources.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requireme nt for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	rds-instance-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information, and principles and access control is required for such accounts.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	rds-snapshots-public-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Relational Database Service (Amazon RDS) instances are not public. Amazon RDS database instances can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	redshift-cluster-public-access-check	Manage access to resources in the AWS Cloud by ensuring that Amazon Redshift clusters are not public. Amazon Redshift clusters can contain sensitive information and principles and access control is required for such accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confident iality of systems. This rule allows you to optionall y set blockedPo rt1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	sagemaker-notebook-no-direct-internet-access	Manage access to resources in the AWS Cloud by ensuring that Amazon SageMaker notebooks do not allow direct internet access. By preventin g direct internet access, you can keep sensitive data from being accessed by unauthorized users.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricti ng all the traffic on the default security group helps in restricting remote access to your AWS resources.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	access-keys-rotated	The credentials are audited for authorize d devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromis ed. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	emr-kerberos-enabled	The access permissions and authorizations can be managed and incorporated with the principles of least privilege and separation of duties, by enabling Kerberos for Amazon EMR clusters. In Kerberos, the services and the users that need to authenticate are known as principals. The principals exist within a Kerberos realm. Within the realm, a Kerberos server is known as the key distribution center (KDC). It provides a means for the principals to authenticate. The KDC authenticates by issuing tickets for authentication. The KDC maintains a database of the principals within its realm, their passwords, and other administrative

Control ID	Control Description	AWS Config Rule	Guidance
			information about each principal.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-group-has-users-check	AWS Identity and Access Managemen t (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissio ns and authoriza tions, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissio ns or job function is one way to incorpora te least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	autoscaling-launch -config-public-ip- disabled	If you configure your Network Interfaces with a public IP address, then the associate d resources to those Network Interfaces are reachable from the internet. EC2 resources should not be publicly accessibl e, as this may allow unintended access to your applications or servers.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-policy-no-statements-with-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ecs-task-definition-nonroot-user	To assist with implementing the principle of least privilege, ensure that a non-root user is designated for access to your Amazon Elastic Container Service (Amazon ECS) task definitions.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	efs-access-point-enforce-root-directory	Enforcing a root directory for an Amazon Elastic File System (Amazon EFS) access point helps restrict data access by ensuring that users of the access point can only reach files of the specified subdirectory.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	efs-access-point-enforce-user-identity	To assist with implementing the principle of least privilege, ensure user enforcement is enabled for your Amazon Elastic File System (Amazon EFS) .When enabled, Amazon EFS replaces the NFS client's user and group IDs with the identity configured on the access point for all file system operations and only grants access to this enforced user identity.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	subnet-auto-assign-public-ip-disabled	Manage access to the AWS Cloud by ensuring Amazon Virtual Private Cloud (VPC) subnets are not automatically assigned a public IP address. Amazon Elastic Compute Cloud (EC2) instances that are launched into subnets that have this attribute enabled have a public IP address assigned to their primary network interface.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Managemen t (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-based AWS accounts to help to incorporate the principle of least functionality.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-user-group-membership-check	AWS Identity and Access Managemen t (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privilege s than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	opensearch-in-vpc-only	Manage access to the AWS Cloud by ensuring Amazon OpenSearch Service domains are within an Amazon Virtual Private Cloud (Amazon VPC). An Amazon OpenSearch Service domain within an Amazon VPC enables secure communication between Amazon OpenSearch Service and other services within the Amazon VPC without the need for an internet gateway, NAT device, or VPN connection.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protection for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	Control Description	AWS Config Rule	Guidance
8.I	Basic security aspects such as physical/ logical access controls and well defined password policy.	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
8.II	A well-defined user role.	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	Control Description	AWS Config Rule	Guidance
8.II	A well-defined user role.	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissio ns management.

Control ID	Control Description	AWS Config Rule	Guidance
8.II	A well-defined user role.	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizat ional IAM password policy. They meet or exceed requireme nts as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUppercaseCh aracters (AWS Foundational Security Best Practices value: true), RequireLo wercaseCharacters (AWS Foundatio nal Security Best Practices value: true), RequireSymbols (AWS Foundatio nal Security Best Practices value: true), RequireNumbers (AWS Foundatio nal Security Best Practices value: true), MinimumPa

Control ID	Control Description	AWS Config Rule	Guidance
			sswordLength (AWS Foundational Security Best Practices value: 14), PasswordR eusePrevention (AWS Foundatio nal Security Best Practices value: 24), and MaxPasswordAge (AWS Foundatio nal Security Best Practices value: 90) for your IAM Password Policy. The actual values should reflect your organizat ion's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.II	A well-defined user role.	iam-policy-no-statements-with-admin-access	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricting policies from containing "Effect": "Allow" with "Action": "*" over "Resource": "*". Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	Control Description	AWS Config Rule	Guidance
8.II	A well-defined user role.	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authorizations, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.
8.II	A well-defined user role.	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	Control Description	AWS Config Rule	Guidance
8.II	A well-defined user role.	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissions and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsageAge (Config Default: 90). The actual value should reflect your organization's policies.

Control ID	Control Description	AWS Config Rule	Guidance
8.III	A Maker-checker concept to reduce the risk of error and misuse and to ensure reliability of data/ information.	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and applicati on failures.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	db-instance-backup-enabled	The backup feature of Amazon RDS creates backups of your databases and transaction logs. Amazon RDS automatically creates a storage volume snapshot of your DB instance, backing up the entire DB instance. The system allows you to set specific retention periods to meet your resilience requireme nts.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	dynamodb-in-backup-plan	To help with data back-up processes, ensure your Amazon DynamoDB tables are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.
8.IX	Arrangement for backup of data with periodic testing.	dynamodb-pitr-enabled	Enable this rule to check that information has been backed up. It also maintains the backups by ensuring that point-in-time recovery is enabled in Amazon DynamoDB. The recovery maintains continuous backups of your table for the last 35 days.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	elasticache-redis-cluster-automatic-backup-check	When automatic backups are enabled, Amazon ElastiCache creates a backup of the cluster on a daily basis. The backup can be retained for a number of days as specified by your organization. Automatic backups can help guard against data loss. If a failure occurs, you can create a new cluster, which restores your data from the most recent backup.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	rds-in-backup-plan	To help with data back-up processes, ensure your Amazon Relational Database Service (Amazon RDS) instances are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifie s your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	s3-bucket-replication-enabled	Amazon Simple Storage Service (Amazon S3) Cross-Region Replication (CRR) supports maintaining adequate capacity and availability. CRR enables automatic, asynchronous copying of objects across Amazon S3 buckets to help ensure that data availability is maintained.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	redshift-backup-enabled	To help with data back-up processes, ensure your Amazon Redshift clusters have automated snapshots. When automated snapshots are enabled for a cluster, Redshift periodically takes snapshots of that cluster. By default, Redshift takes a snapshot every eight hours or every 5 GB for each node of data changes, or whichever comes first.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	backup-plan-min-frequency-and-min-retention-check	To help with data back-up processes, ensure your AWS Backup plan is set for a minimum frequency and retention. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredFrequencyValue (Config default: 1), requiredRetentionDays (Config default: 35) and requiredFrequencyUnit (Config default: days) parameters. The actual value should reflect your organizations requirements.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	backup-recovery-point-manual-deletion-disabled	Ensure that your AWS Backup recovery points have an attached resource-based policy which prevents deletion of recovery points. Using a resource-based policy to prevent deletion of recovery points can assist in preventin g accidental or intentional deletion.

Control ID	Control Description	AWS Config Rule	Guidance
8.IX	Arrangement for backup of data with periodic testing.	backup-recovery-point-minimum-retention-check	To help with data back-up processes, ensure your AWS Backup recovery points have a minimum retention period set. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements. This rule allows you to set the requiredRetentionDays (config default: 35) parameter. The actual value should reflect your organizations requirements.

Template

The template is available on GitHub: Operational Best Practices for RBI MD-ITF.

Operational Best Practices for Security, Identity, and Compliance Services

This conformance pack contains AWS Config rules based on Security, Identity, and Compliance Services. For more information, see Security, Identity, and Compliance on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Security, Identity, and Compliance Services.

Operational Best Practices for Serverless

This conformance pack contains AWS Config rules based on Serverless solutions. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Serverless.

Operational Best Practices for Storage Services

This conformance pack contains AWS Config rules based on Storage Services. For more information, see Cloud Storage on AWS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Operational Best Practices for Storage Services.

Operational Best Practices for SWIFT CSP

Conformance packs provide a general-purpose compliance framework designed to enable you to create security, operational or cost-optimization governance checks using managed or custom AWS Config rules and AWS Config remediation actions. Conformance Packs, as sample templates,

are not designed to fully ensure compliance with a specific governance or compliance standard. You are responsible for making your own assessment of whether your use of the Services meets applicable legal and regulatory requirements.

The following provides a sample mapping between the SWIFT's Customer Security Programme (CSP) and AWS managed Config rules. Each AWS Config rule applies to a specific AWS resource, and relates to one or more SWIFT CSP controls. A SWIFT CSP control can be related to multiple AWS Config rules. Refer to the table below for more detail and guidance related to these mappings.

Control ID	AWS Config Rule	Guidance
1.1	ec2-instance-managed-by-systems-manager	An inventory of the software platforms and applications within the organization is possible by managing Amazon Elastic Compute Cloud (Amazon EC2) instances with AWS Systems Manager. Use AWS Systems Manager to provide detailed system configurations, operating system patch levels, services name and type, software installations, application name, publisher and version, and other details about your environment.
1.1	ec2-instance-no-public-ip	Manage access to the AWS Cloud by ensuring Amazon Elastic Compute Cloud (Amazon EC2) instances cannot be publicly accessed. Amazon EC2 instances can contain sensitive information and access control is required for such accounts.

Control ID	AWS Config Rule	Guidance
1.1	ec2-no-amazon-key-pair	This rule checks if running Amazon Elastic Compute Cloud (Amazon EC2) instances are launched using amazon key pairs. This can assist in reducing the risk of compromised credentia ls. Amazon EC2 Instances without key pairs can still be accessed using Session Manager or Browser based SSH connection from the AWS console.

Control ID	AWS Config Rule	Guidance
1.1	ec2-instances-in-vpc	Deploy Amazon Elastic Compute Cloud (Amazon EC2) instances within an Amazon Virtual Private Cloud (Amazon VPC) to enable secure communication between an instance and other services within the amazon VPC, without requiring an internet gateway, NAT device, or VPN connection. All traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. Assign Amazon EC2 instances to an Amazon VPC to properly manage access.

Control ID	AWS Config Rule	Guidance
1.1	vpc-default-security-group-closed	Amazon Elastic Compute Cloud (Amazon EC2) security groups can help in the management of network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Restricting all the traffic on the default security group helps in restricting remote access to your AWS resources.
1.1	vpc-network-acl-unused-check	This rule ensures that Amazon Virtual Private Cloud (VPC) network access control lists are in use. Monitoring for unused network access control lists can assist in accurate inventory and management of your environment.

Control ID	AWS Config Rule	Guidance
1.1	vpc-sg-open-only-to-authorized-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) Security Groups. Not restricting access on ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. By restricting access to resources within a security group from the internet (0.0.0.0/0) remote access can be controlled to internal systems.

Control ID	AWS Config Rule	Guidance
1.2	iam-customer-policy-blocked-kms-actions	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, restricti ng policies from containin g blocked actions on all AWS Key Management Service keys. Having more privileges than needed to complete a task may violate the principle of least privilege and separation of duties. This rule allows you to set the blockedActionsPatt erns parameter. (AWS Foundational Security Best Practices value: kms:Decry pt, kms:ReEncryptFrom). The actual values should reflect your organization's policies

Control ID	AWS Config Rule	Guidance
1.2	iam-group-has-users-check	AWS Identity and Access Management (IAM) can help you incorporate the principles of least privilege and separation of duties with access permissions and authorizations, by ensuring that IAM groups have at least one user. Placing users in groups based on their associated permissions or job function is one way to incorporate least privilege.

Control ID	AWS Config Rule	Guidance
1.2	iam-inline-policy-blocked-kms-actions	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to allow blocked actions on all AWS Key Management Service keys. AWS recommends to use managed policies instead of inline policies. The managed policies allow reusability, versioning, rolling back, and delegating permissions management. This rule allows you to set the blockedActionsPatterns parameter. (AWS Foundational Security Best Practices value: kms:Decrypt, kms:ReEncryptFrom). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1.2	iam-no-inline-policy-check	Ensure an AWS Identity and Access Management (IAM) user, IAM role or IAM group does not have an inline policy to control access to systems and assets. AWS recommend s to use managed policies instead of inline policies. The managed policies allow reusability, versioning and rolling back, and delegating permissions management.
1.2	iam-user-no-policies-check	This rule ensures AWS Identity and Access Management (IAM) policies are attached only to groups or roles to control access to systems and assets. Assigning privileges at the group or the role level helps to reduce opportunity for an identity to receive or retain excessive privileges.

Control ID	AWS Config Rule	Guidance
1.2	restricted-ssh	Amazon Elastic Compute Cloud (Amazon EC2) Security Groups can help manage network access by providing stateful filtering of ingress and egress network traffic to AWS resources. Not allowing ingress (or remote) traffic from 0.0.0.0/0 to port 22 on your resources help you restricting remote access.
1.2	nacl-no-unrestricted-ssh-rdp	Access to remote server administration ports in your Network Access Control Lists (NACLs), such as port 22 (SSH) and port 3389 (RDP), should not be publicly accessible, as this may allow unintende d access to resources within your VPC.

Control ID	AWS Config Rule	Guidance
1.2	s3-bucket-acl-prohibited	This rule checks to see if Access Control Lists (ACLs) are used to for access control on Amazon S3 Buckets. ACLs are legacy access control mechanisms for Amazon S3 buckets that predate AWS Identity and Access Management (IAM). Instead of ACLs, it is a best practice to use IAM policies or S3 bucket policies to more easily manage access to your S3 buckets.
1.2	s3-bucket-logging-enabled	Amazon Simple Storage Service (Amazon S3) server access logging provides a method to monitor the network for potential cybersecurity events. The events are monitored by capturing detailed records for the requests that are made to an Amazon S3 bucket. Each access log record provides details about a single access request. The details include the requester, bucket name, request time, request action, response status, and an error code, if relevant.

Control ID	AWS Config Rule	Guidance
1.2	s3-bucket-policy-grantee-check	Manage access to the AWS Cloud by enabling s3_ bucket_policy_grantee_check. This rule checks that the access granted by the Amazon S3 bucket is restricted by any of the AWS principals, federated users, service principals, IP addresses, or Amazon Virtual Private Cloud (Amazon VPC) IDs that you provide.

Control ID	AWS Config Rule	Guidance
1.2	sns-topic-message-delivery-notification-enabled	To assist with logging requirements in your environment, ensure to enable delivery status notifications are enabled for your Amazon Simple Notification Service (Amazon SNS) topics. Logging message delivery status helps provide better operational insight, such as the following: Knowing whether a message was delivered to the Amazon SNS endpoint, identifying the response sent from the Amazon SNS endpoint to Amazon SNS, and determining the message dwell time (the time between the publish timestamp and just before handing off to an Amazon SNS endpoint).

Control ID	AWS Config Rule	Guidance
1.4	internet-gateway-authorized-vpc-only	Manage access to resources in the AWS Cloud by ensuring that internet gateways are only attached to authorize d Amazon Virtual Private Cloud (Amazon VPC). Internet gateways allow bi-directional internet access to and from the Amazon VPC that can potentially lead to unauthori zed access to Amazon VPC resources.
1.4	restricted-common-ports	Manage access to resources in the AWS Cloud by ensuring common ports are restricted on Amazon Elastic Compute Cloud (Amazon EC2) security groups. Not restricting access to ports to trusted sources can lead to attacks against the availability, integrity and confidentiality of systems. This rule allows you to optionally set blockedPort1 - blockedPort5 parameters (Config Defaults: 20,21,338 9,3306,4333). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1.4	lambda-function-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring AWS Lambda functions cannot be publicly accessed. Public access can potentially lead to degradation of availability of resources.
1.4	s3-account-level-public-access-blocks-periodic	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access. This rule allows you to optionally set the ignorePublicAcls (Config Default: True), blockPublicPolicy (Config Default: True), blockPublicAcls (Config Default: True), and restrictPublicBuckets parameters (Config Default: True). The actual values should reflect your organization's policies.

Control ID	AWS Config Rule	Guidance
1.4	s3-bucket-level-public-access-prohibited	Manage access to resources in the AWS Cloud by ensuring that Amazon Simple Storage Service (Amazon S3) buckets cannot be publicly accessed. This rule helps keeping sensitive data safe from unauthorized remote users by preventing public access at the bucket level.
1.4	s3-bucket-public-read-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.
1.4	s3-bucket-public-write-prohibited	Manage access to resources in the AWS Cloud by only allowing authorized users, processes, and devices access to Amazon Simple Storage Service (Amazon S3) buckets. The management of access should be consistent with the classification of the data.

Control ID	AWS Config Rule	Guidance
1.4	ssm-document-not-public	Ensure AWS Systems Manager (SSM) documents are not public, as this may allow unintended access to your SSM documents. A public SSM document can expose information about your account, resources and internal processes.
2.3	ec2-imdsv2-check	Ensure the Instance Metadata Service Version 2 (IMDSv2) method is enabled to help protect access and control of Amazon Elastic Compute Cloud (Amazon EC2) instance metadata. The IMDSv2 method uses session-b ased controls. With IMDSv2, controls can be implemented to restrict changes to instance metadata.
2.3	ec2-instance-multiple-eni-c heck	This rule checks if your Amazon Elastic Compute Cloud (Amazon EC2) instances have multiple ENIs. Having multiple ENIs can cause dual-homed instances, meaning instances that have multiple subnets. This can add network security complexity and introduce unintended network paths and access.

Control ID	AWS Config Rule	Guidance
2.3	ec2-token-hop-limit-check	Ensure the Instance Metadata Service (IMDS) HTTP PUT response is restricted to the Amazon Elastic Compute Cloud (Amazon EC2) instance. With IMDSv2, the PUT response that contains the secret token by default cannot travel outside the instance, because the Metadata response hop limit is set to 1 (Config default). If this value is greater than 1, the token is able to leave the EC2 instance.
2.3	ec2-volume-inuse-check	This rule ensures that Amazon Elastic Block Store volumes that are attached to Amazon Elastic Compute Cloud (Amazon EC2) instances are marked for deletion when an instance is terminated. If an Amazon EBS volume isn't deleted when the instance that it's attached to is terminated, it may violate the concept of least functiona lity.

Control ID	AWS Config Rule	Guidance
2.3	account-part-of-organizations	Centralized management of AWS accounts within AWS Organizations helps to ensure that accounts are compliant . The lack of centralized account governance may lead to inconsistent account configurations, which may expose resources and sensitive data.
2.3	lambda-inside-vpc	Deploy AWS Lambda functions within an Amazon Virtual Private Cloud (Amazon VPC) for a secure communica tion between a function and other services within the Amazon VPC. With this configuration, there is no requirement for an internet gateway, NAT device, or VPN connection. All the traffic remains securely within the AWS Cloud. Because of their logical isolation, domains that reside within an Amazon VPC have an extra layer of security when compared to domains that use public endpoints. To properly manage access, AWS Lambda functions should be assigned to a VPC.

Control ID	AWS Config Rule	Guidance
2.3	kms-cmk-not-scheduled-for-deletion	To help protect data at rest, ensure necessary customer master keys (CMKs) are not scheduled for deletion in AWS Key Management Service (AWS KMS). Because key deletion is necessary at times, this rule can assist in checking for all keys scheduled for deletion, in case a key was scheduled unintentionally.
2.3	s3-bucket-versioning-enabled	Amazon Simple Storage Service (Amazon S3) bucket versioning helps keep multiple variants of an object in the same Amazon S3 bucket. Use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. Versioning helps you to easily recover from unintended user actions and application failures.

Control ID	AWS Config Rule	Guidance
2.3	secretsmanager-secret-unused	If unused credentials exist in AWS Secrets Manager, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule allows you to set a value to the unusedForDays (Config Default: 90). The actual value should reflect your organization's policies.
2.5A	ebs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic Block Store (Amazon EBS) volumes are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.5A	ec2-ebs-encryption-by-default	To help protect data at rest, ensure that encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes. Because sensitive data can exist at rest in these volumes, enable encryption at rest to help protect that data.
2.5A	efs-encrypted-check	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic File System (EFS).
2.5A	efs-in-backup-plan	To help with data back-up processes, ensure your Amazon Elastic File System (Amazon EFS) file systems are a part of an AWS Backup plan. AWS Backup is a fully managed backup service with a policy-based backup solution. This solution simplifies your backup management and enables you to meet your business and regulatory backup compliance requirements.

Control ID	AWS Config Rule	Guidance
2.5A	encrypted-volumes	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Elastic Block Store (Amazon EBS) volumes.
2.5A	kinesis-stream-encrypted	Because sensitive data can exist and to help protect data at rest, ensure encryption is enabled for your Amazon Kinesis Streams.
2.5A	s3-bucket-server-side-encryption-enabled	To help protect data at rest, ensure encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in Amazon S3 buckets, enable encryption to help protect that data.
2.5A	s3-default-encryption-kms	Ensure that encryption is enabled for your Amazon Simple Storage Service (Amazon S3) buckets. Because sensitive data can exist at rest in an Amazon S3 bucket, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
2.5A	sns-encrypted-kms	To help protect data at rest, ensure that your Amazon Simple Notification Service (Amazon SNS) topics require encryption using AWS Key Management Service (AWS KMS). Because sensitive data can exist at rest in published messages, enable encryptio n at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
4.1	iam-password-policy	The identities and the credentials are issued, managed, and verified based on an organizational IAM password policy. They meet or exceed requirements as stated by NIST SP 800-63 and the AWS Foundatio nal Security Best Practices standard for password strength. This rule allows you to optionally set RequireUp percaseCharacters (AWS Foundational Security Best Practices value: true), RequireLowercaseCharacters (AWS Foundational Security Best Practices value: true), RequireSymbols (AWS Foundational Security Best Practices value: true), RequireNumbers (AWS Foundational Security Best Practices value: true), MinimumPasswordLength (AWS Foundational Security Best Practices value: 14), PasswordReusePrevention (AWS Foundational Security Best Practices value: 24), and MaxPasswordAge (AWS Foundational Security Best Practices value: 90) for your IAM Password Policy. The

Control ID	AWS Config Rule	Guidance
		actual values should reflect your organization's policies.
4.1	access-keys-rotated	The credentials are audited for authorized devices, users, and processes by ensuring IAM access keys are rotated as specified by the organizational policy. Changing the access keys on a regular schedule is a security best practice. It shortens the period an access key is active and reduces the business impact if the keys are compromised. This rule requires an access key rotation value (Config Default: 90). The actual value should reflect your organizat ion's policies.
4.2	iam-user-mfa-enabled	Enable this rule to restrict access to resources in the AWS Cloud. This rule ensures multi-factor authentication (MFA) is enabled for all users. MFA adds an extra layer of protection on top of sign-in credentials. Reduce the incidents of compromised accounts by requiring MFA for users.

Control ID	AWS Config Rule	Guidance
4.2	mfa-enabled-for-iam-console-access	Manage access to resources in the AWS Cloud by ensuring that MFA is enabled for all AWS Identity and Access Management (IAM) users that have a console password. MFA adds an extra layer of protection on top of sign-in credentials. By requiring MFA for users, you can reduce incidents of compromised accounts and keep sensitive data from being accessed by unauthorized users.
4.2	root-account-hardware-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring hardware MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.

Control ID	AWS Config Rule	Guidance
4.2	root-account-mfa-enabled	Manage access to resources in the AWS Cloud by ensuring MFA is enabled for the root user. The root user is the most privileged user in an AWS account. The MFA adds an extra layer of protectio n for sign-in credentials. By requiring MFA for the root user, you can reduce the incidents of compromised AWS accounts.
5.1	ec2-instance-profile-attached	EC2 instance profiles pass an IAM role to an EC2 instance. Attaching an instance profile to your instances can assist with least privilege and permissions management.
5.1	iam-policy-no-statements-wi th-full-access	Ensure IAM Actions are restricted to only those actions that are needed. Allowing users to have more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
5.1	iam-root-access-key-check	Access to systems and assets can be controlled by checking that the root user does not have access keys attached to their AWS Identity and Access Management (IAM) role. Ensure that the root access keys are deleted. Instead, create and use role-base d AWS accounts to help to incorporate the principle of least functionality.
5.1	iam-user-group-membership-check	AWS Identity and Access Management (IAM) can help you restrict access permissions and authoriza tions, by ensuring users are members of at least one group. Allowing users more privileges than needed to complete a task may violate the principle of least privilege and separation of duties.

Control ID	AWS Config Rule	Guidance
5.1	iam-user-unused-credentials-check	AWS Identity and Access Management (IAM) can help you with access permissio ns and authorizations by checking for IAM passwords and access keys that are not used for a specified time period. If these unused credentials are identified, you should disable and/or remove the credentials, as this may violate the principle of least privilege. This rule requires you to set a value to the maxCredentialUsage Age (Config Default: 90). The actual value should reflect your organization's policies.
5.4	secretsmanager-rotation-enabled-check	This rule ensures AWS Secrets Manager secrets have rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised.

Control ID	AWS Config Rule	Guidance
5.4	secretsmanager-scheduled-rotation-success-check	This rule ensures that AWS Secrets Manager secrets have rotated successfully according to the rotation schedule. Rotating secrets on a regular schedule can shorten the period that a secret is active, and potentially reduce the business impact if it is compromised.
5.4	secretsmanager-secret-periodic-rotation	This rule ensures AWS Secrets Manager secrets have periodic rotation enabled. Rotating secrets on a regular schedule can shorten the period a secret is active, and potentially reduce the business impact if the secret is compromised. The default value is 90 days.
5.4	secretsmanager-using-cmk	To help protect data at rest, ensure encryption with AWS Key Management Service (AWS KMS) is enabled for AWS Secrets Manager secrets. Because sensitive data can exist at rest in Secrets Manager secrets, enable encryption at rest to help protect that data.

Control ID	AWS Config Rule	Guidance
6.4	ec2-instance-detailed-monitoring-enabled	Enable this rule to help improve Amazon Elastic Compute Cloud (Amazon EC2) instance monitoring on the Amazon EC2 console, which displays monitoring graphs with a 1-minute period for the instance.
6.4	cloudwatch-log-group-encrypted	To help protect sensitive data at rest, ensure encryption is enabled for your Amazon CloudWatch Log Groups.
6.4	cloud-trail-cloud-watch-logs-enabled	Use Amazon CloudWatch to centrally collect and manage log event activity. Inclusion of AWS CloudTrail data provides details of API call activity within your AWS account.
6.4	cloudtrail-enabled	AWS CloudTrail can help in non-repudiation by recording AWS Management Console actions and API calls. You can identify the users and AWS accounts that called an AWS service, the source IP address where the calls generated, and the timings of the calls. Details of captured data are seen within AWS CloudTrail Record Contents.

Control ID	AWS Config Rule	Guidance
6.4	cloud-trail-encryption-enabled	Because sensitive data may exist and to help protect data at rest, ensure encryption is enabled for your AWS CloudTrail trails.
6.4	cloud-trail-log-file-validation-enabled	Utilize AWS CloudTrail log file validation to check the integrity of CloudTrail logs. Log file validation helps determine if a log file was modified or deleted or unchanged after CloudTrail delivered it. This feature is built using industry standard algorithms: SHA-256 for hashing and SHA-256 with RSA for digital signing. This makes it computationally infeasible to modify, delete or forge CloudTrail log files without detection.
6.4	ec2-stopped-instance	Enable this rule to help with the baseline configuration of Amazon Elastic Compute Cloud (Amazon EC2) instances by checking whether Amazon EC2 instances have been stopped for more than the allowed number of days, according to your organization's standards.

Control ID	AWS Config Rule	Guidance
6.4	vpc-flow-logs-enabled	The VPC flow logs provide detailed records for informati on about the IP traffic going to and from network interfaces in your Amazon Virtual Private Cloud (Amazon VPC). By default, the flow log record includes values for the different components of the IP flow, including the source, destination, and protocol.
6.5A	guardduty-enabled-centraliz ed	Amazon GuardDuty can help to monitor and detect potential cybersecurity events by using threat intellige nce feeds. These include lists of malicious IPs and machine learning to identify unexpected, unauthorized, and malicious activity within your AWS Cloud environment.

Control ID	AWS Config Rule	Guidance
6.5A	securityhub-enabled	AWS Security Hub helps to monitor unauthorized personnel, connections, devices, and software. AWS Security Hub aggregates, organizes, and prioritizes the security alerts, or findings, from multiple AWS services. Some such services are Amazon Security Hub, Amazon Inspector, Amazon Macie, AWS Identity and Access Management (IAM) Access Analyzer, and AWS Firewall Manager, and AWS Partner solutions.

Template

The template is available on GitHub: Operational Best Practices for SWIFT CSP.

Security Best Practices for Amazon Elastic Container Service (Amazon ECS)

This conformance pack contains AWS Config rules based on Amazon ECS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon ECS.

Security Best Practices for Amazon Elastic File System (Amazon EFS)

This conformance pack contains AWS Config rules based on Amazon EFS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon EFS.

Security Best Practices for Amazon Elastic Kubernetes Service (Amazon EKS)

This conformance pack contains AWS Config rules based on Amazon EKS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon EKS.

Security Best Practices for Amazon CloudFront

This conformance pack contains AWS Config rules based on Amazon CloudFront. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon CloudFront.

Security Best Practices for Amazon OpenSearch Service

This conformance pack contains AWS Config rules based on Amazon OpenSearch Service. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon OpenSearch Service.

Security Best Practices for Amazon Redshift

This conformance pack contains AWS Config rules based on Amazon Redshift. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon Redshift.

Security Best Practices for Amazon Relational Database Service (Amazon RDS)

This conformance pack contains AWS Config rules based on Amazon RDS. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon RDS.

Security Best Practices for AWS Auto Scaling

This conformance pack contains AWS Config rules based on AWS Auto Scaling. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS Auto Scaling.

Security Best Practices for AWS CloudTrail

This conformance pack contains AWS Config rules based on AWS CloudTrail. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS CloudTrail.

Security Best Practices for AWS CodeBuild

This conformance pack contains AWS Config rules based on AWS CodeBuild. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS CodeBuild.

Security Best Practices for Amazon ECR

This conformance pack contains AWS Config rules based on Amazon Elastic Container Registry (Amazon ECR). For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon ECR.

Security Best Practices for AWS Lambda

This conformance pack contains AWS Config rules based on AWS Lambda. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS Lambda.

Security Best Practices for AWS Network Firewall

This conformance pack contains AWS Config rules based on AWS Network Firewall. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS Network Firewall.

Security Best Practices for Amazon SageMaker AI

This conformance pack contains AWS Config rules based on Amazon SageMaker AI. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for Amazon SageMaker AI.

Security Best Practices for AWS Secrets Manager

This conformance pack contains AWS Config rules based on AWS Secrets Manager. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS Secrets Manager.

Security Best Practices for AWS WAF

This conformance pack contains AWS Config rules based on AWS WAF. For a list of all managed rules supported by AWS Config, see List of AWS Config Managed Rules.

See the `Parameters` section in the following template for the names and descriptions of the required parameters.

The template is available on GitHub: Security Best Practices for AWS WAF.

Example Templates with Remediation Action

Operational Best Practices For Amazon DynamoDB with Remediation

The template is available on GitHub: Operational Best Practices For Amazon DynamoDB with Remediation.

Operational Best Practices For Amazon S3 with Remediation

The template is available on GitHub: Operational Best Practices For Amazon S3 with Remediation.

For more information about template structure, see Template Anatomy in the AWS CloudFormation User Guide.

Creating templates for Custom Conformance Packs for AWS Config

A custom conformance pack is a unique collection of AWS Config rules and remediation actions that you can deploy together in an account and an AWS Region, or across an organization in AWS Organizations.

To make a custom conformance pack, follow the steps in the following **Customizing the template** section to author a YAML file that contains the list of AWS Config Managed Rules or AWS Config Custom Rules that you want to work with.

Topics

- Terminology
- Customizing the template

Terminology

AWS Config Managed Rules are predefined rules owned by AWS Config.

AWS Config Custom Rules are rules that you create from scratch.

There are two ways to create AWS Config custom rules: with Lambda functions (AWS Lambda Developer Guide) and with Guard (Guard GitHub Repository), a policy-as-code language. AWS Config custom rules created with AWS Lambda are called *AWS Config Custom Lambda Rules* and AWS Config custom rules created with Guard are called *AWS Config Custom Policy Rules*.

Customizing the template

Creating your YAML file

To create a YAML file, open a text editor and save the file as *.yaml*.

> **Note**
>
> Your file will contain a **Parameters** and **Resources** section.

Parameters

The `Parameters` section in your YAML file is for the rule parameters for the set of AWS Config rules that you will add later in the `Resources` section. Create the `Parameters` section by copying and pasting the following code block into your YAML file, customizing it as needed and repeating for each rule parameter.

```
Parameters:
    NameOfRuleParamNameOfRuleParameter:
        Default: Parameter value
        Type: Type
    ...
```

For example:

```
Parameters:
    IamPasswordPolicyParamMinimumPasswordLength:
        Default: '14'
        Type: String
```

> **Note**
>
> When selecting the AWS Config Rules to build your custom conformance pack, check you have the resources provisioned within your account that will be evaluated for the AWS Config Rules.

1. The first line in the parameter section after `Parameters:` is a concatenated string of *`NameOfRule`* + Param + *`NameOfRuleParameter`*.

   a. Replace *`NameOfRule`* with a consistent name that you create for the rule. For example, that could be **IamPasswordPolicy** for the **iam-password-policy** rule.

   b. Type `Param`.

   c. Then, replace *`NameOfRuleParameter`* with the name of the rule parameter for your specific rule. For AWS Config Managed Rules, the name of the rule parameter is located in the List of AWS Config Managed Rules (for example, **MinimumPasswordLength** is a name of a rule parameter for the **iam-password-policy** rule). For AWS Config Custom Rules, the name of the rule parameter is the name that you chose when you created the rule.

2. If you are using an AWS Config Managed Rule, find the appropriate AWS Config rule in the list of managed rules so you'll know the accepted values for `Default` and `Type` for your particular rule. For AWS Config Custom Rules, use the values you selected when creating your rule.

> **Note**
>
> For each parameter, `Type` must be specified. `Type` can be one of "String", "int", "double", "CSV", "boolean" and "StringMap".

Resources

The `Resources` section lists the rules that are being added to your Custom Conformance Pack. Add the following `Resources` block directly beneath your `Parameters` section, customizing it as needed and repeating for each rule. For more information on the specifications, see AWS::Config::ConfigRule.

```
Resources:
     NameOfRule:
        Properties:
            ConfigRuleName: ActualConfigRuleName
            InputParameters:
                NameOfRuleParameter: !Ref NameOfRuleParamNameOfRuleParameter
            Source:
                Owner: Owner
                SourceIdentifier: SOURCE_IDENTIFIER
        Type: AWS::Config::ConfigRule
     ...
```

For example:

```
Resources:
    IamPasswordPolicy:
        Properties:
            ConfigRuleName: iam-password-policy
            InputParameters:
                MinimumPasswordLength: !Ref IamPasswordPolicyParamMinimumPasswordLength
            Source:
                Owner: AWS
                SourceIdentifier: IAM_PASSWORD_POLICY
        Type: AWS::Config::ConfigRule
```

> **Note**
>
> When selecting the AWS Config rules to build your custom conformance pack, check that you have the resources that will be evaluated for the AWS Config rules provisioned within your account. For more information, see Supported Resource Types.

1. Replace *`NameOfRule`* with the same name you created in the `Parameters` section.
2. For AWS Config Managed Rules, replace *`ActualConfigRuleName`* with the title of the appropriate rule page on the List of AWS Config Managed Rules. For AWS Config Custom Rules, use the Config Rule name you chose at the time of the rule's creation.
3. Replace *`NameOfRuleParameter`* with the same name you used in the `Parameters` section. After the colon, copy and paste the same concatenated string of `!Ref` + *`NameOfRule`* + Param + *`NameOfRuleParameter`* that you created in `Parameters` section.
4. Change *`Owner`* to the appropriate value.

   > **Note**
   >
   > **AWS Config Managed Rules**
   > For AWS Config Managed Rules, the value for `Owner` will be `AWS`.
   > **AWS Config Custom Rules**
   > For AWS Config custom rules created with Guard, the value for `Owner` will be `CUSTOM_POLICY`. For AWS Config custom rules created with Lambda, the value for `Owner` will be `CUSTOM_LAMBDA`.

5. Change *`SOURCE_IDENTIFIER`* to the appropriate value.

   > **Note**
   >
   > **AWS Config Managed Rules**
   > For AWS Config Managed Rules, copy the identifier by following the link from the rule you select from the List of AWS Config Managed Rules (for example, the source identifier for the **access-keys-rotated** rule is **ACCESS_KEYS_ROTATED**).
   > **AWS Config Custom Rules**

For AWS Config custom rules created with Lambda, the `SourceIdentifier` is the Amazon Resource Name (ARN) of the rule's AWS Lambda function, such as `arn:aws:lambda:us-east-2:123456789012:function:`*`ActualConfigRuleName`*. For AWS Config custom rules created with Guard, this field is not needed.

Altogether, your filled out custom conformance pack should begin to look similar to the following, which is an example using these AWS Config Managed Rules: **iam-password-policy**, **access-keys-rotated**, and **iam-user-unused-credentials-check**.

```
Parameters:
    IamPasswordPolicyParamMinimumPasswordLength:
        Default: '14'
        Type: String
    AccessKeysRotatedParamMaxAccessKeyAge:
        Default: '90'
        Type: String
    IamUserUnusedCredentialsCheckParamMaxCredentialUsageAge:
        Default: '45'
        Type: String
Resources:
    IamPasswordPolicy:
        Properties:
            ConfigRuleName: iam-password-policy
            InputParameters:
                MinimumPasswordLength: !Ref IamPasswordPolicyParamMinimumPasswordLength
            Source:
                Owner: AWS
                SourceIdentifier: IAM_PASSWORD_POLICY
        Type: AWS::Config::ConfigRule
    AccessKeysRotated:
        Properties:
            ConfigRuleName: access-keys-rotated
            InputParameters:
                maxAccessKeyAge: !Ref AccessKeysRotatedParamMaxAccessKeyAge
            Source:
                Owner: AWS
                SourceIdentifier: ACCESS_KEYS_ROTATED
        Type: AWS::Config::ConfigRule
    IamUserUnusedCredentialsCheck:
        Properties:
```

```
            ConfigRuleName: iam-user-unused-credentials-check
            InputParameters:
                maxCredentialUsageAge: !Ref
IamUserUnusedCredentialsCheckParamMaxCredentialUsageAge
            Source:
                Owner: AWS
                SourceIdentifier: IAM_USER_UNUSED_CREDENTIALS_CHECK
        Type: AWS::Config::ConfigRule
```

Deploying Conformance Packs for AWS Config

You can use the AWS Config console or the AWS CLI to deploy your conformance packs.

Deploy Conformance Packs (Console)

On the **Conformance packs** page, you can deploy a conformance pack for an account in a Region. You can also edit and delete the deployed conformance pack.

You can deploy a conformance pack using AWS Config sample templates or your own custom template. For instructions on how to create personalized conformance packs, see Custom Conformance Pack.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Conformance packs** page and choose **Deploy conformance pack**.
3. On the **Specify template** page, either choose a sample template or use an existing template. For more information, see Conformance Pack Sample Templates.

   - If you choose **Use sample template**, select a **Sample template** from the dropdown list of sample templates.

     For information about the contents of each template, see Conformance Pack Sample Templates.
   - If you choose **Template is ready**, specify the template source. It is either an Amazon S3 URI, an AWS Systems Manager document (SSM document), or a template that you upload.

     If your template is more than 50 KB, upload it to the S3 bucket and select that S3 bucket location. For example: s3://*bucketname/prefix*.

> **Important**
>
> Choose **Template is ready** if you created your conformance pack YAML file from scratch based on Custom Conformance Pack.

4. Choose **Next**.
5. On the **Specify conformance pack details** page, enter the name for your conformance pack.

   The conformance pack name must be a unique name with a maximum of 256 alphanumeric characters. The name can contain hyphens but cannot contain spaces.
6. Optional: Add a parameter.

   Parameters are defined in your template and help you manage and organize your resources.
7. Choose **Next**.
8. On the **Review and deploy** page, review all of the information.

   You can edit the template details and conformance pack details by choosing **Edit**.
9. Choose **Deploy conformance pack**.

   AWS Config displays the conformance pack on the conformance pack page with the appropriate status.

   If your conformance pack deployment fails, check your permissions, verify that you did the prerequisite steps, and try again. Or you can contact AWS Support.

To deploy a **conformance pack using sample template with remediations**, see the A. Prerequisites for Using a Conformance Pack With Remediation and then use the preceding procedure.

To deploy a **conformance pack with one or more AWS Config rules**, see the B. Prerequisites for Using a Conformance Pack With One or More Custom AWS Config Rules.

Deploy Conformance Packs (AWS CLI)

1. Open a command prompt or a terminal window.

2. Enter one of the following commands to deploy a conformance pack named **MyConformancePack**. The template source is either an Amazon S3 URI, a template that you upload, or an AWS Systems Manager document (SSM document).

   Amazon S3 URI

   ```
   aws configservice put-conformance-pack
   --conformance-pack-name MyConformancePack
   --template-s3-uri "s3://amzn-s3-demo-bucket/templateName.yaml"
   --delivery-s3-bucket amzn-s3-demo-bucket
   ```

   YAML template from your local directory

   ```
   aws configservice put-conformance-pack
   --conformance-pack-name MyConformancePack
   --template-body template body
   ```

   AWS Systems Manager Document (Systems Manager Document)

   ```
   aws configservice put-conformance-pack
   --conformance-pack-name MyConformancePack
   --template-ssm-document-details
    DocumentName=SSMDocumentName,DocumentVersion=SSMDocumentVersion
   --delivery-s3-bucket amzn-s3-demo-bucket
   ```

3. Press Enter to run the command.

   You should see output similar to the following.

   ```
   {
       "conformancePackArn": "arn:aws:config:us-west-2:AccountID:conformance-pack/
   MyConformancePack1/conformance-pack-ID"
   }
   ```

> **Note**
>
> For more information on creating a YAML template for a conformance pack, see Custom Conformance Pack.

Editing Conformance Packs for AWS Config

You can use the AWS Config console or the AWS CLI to edit your conformance packs.

Editing Conformance Packs (Console)

1. To edit a conformance pack, select the conformance pack from the table.
2. Choose **Actions** and then choose **Edit**.
3. On the **Edit conformance pack** page, you can edit the template details, sample template, conformance pack, and parameters section.

   You cannot change the name of the conformance pack.
4. Choose **Save changes**.

   The conformance pack is displayed with the AWS Config rules.

Editing Conformance Packs (AWS CLI)

If you are editing a conformance pack that you added previously, use the same `PutConformancePack` command that you use when deploying a conformance pack.

1. Open a command prompt or a terminal window.
2. Enter one of the following commands to deploy a conformance pack named **`MyConformancePack`**. The template source is either an Amazon S3 URI, a template that you upload, or an AWS Systems Manager document (SSM document).

   Amazon S3 URI

   ```
   aws configservice put-conformance-pack
   --conformance-pack-name MyConformancePack
   --template-s3-uri "s3://amzn-s3-demo-bucket/templateName.yaml"
   --delivery-s3-bucket amzn-s3-demo-bucket
   ```

   YAML template from your local directory

   ```
   aws configservice put-conformance-pack
   --conformance-pack-name MyConformancePack
   --template-body template body
   ```

AWS Systems Manager Document (Systems Manager Document)

```
aws configservice put-conformance-pack
--conformance-pack-name MyConformancePack
--template-ssm-document-details
 DocumentName=SSMDocumentName,DocumentVersion=SSMDocumentVersion
--delivery-s3-bucket amzn-s3-demo-bucket
```

3. Press Enter to run the command.

   You should see output similar to the following.

```
{
    "conformancePackArn": "arn:aws:config:us-west-2:AccountID:conformance-pack/
MyConformancePack1/conformance-pack-ID"
}
```

> **Note**
>
> For more information on creating a YAML template for a conformance pack, see Custom Conformance Pack.

Deleting Conformance Packs for AWS Config

You can use the AWS Config console or the AWS CLI to delete conformance packs.

Considerations

Recommendation: Consider excluding the `AWS::Config::ResourceCompliance` resource type from recording before deleting rules

Deleting rules creates configuration items (CIs) for `AWS::Config::ResourceCompliance` that can affect your costs for the configuration recorder. If you are deleting rules which evaluate a large number of resource types, this can lead to a spike in the number of CIs recorded.

To avoid the associated costs, you can opt to disable recording for the `AWS::Config::ResourceCompliance` resource type before deleting rules, and re-enable recording after the rules have been deleted.

However, since deleting rules is an asynchronous process, it might take an hour or more to complete. During the time when recording is disabled for `AWS::Config::ResourceCompliance`, rule evaluations will not be recorded in the associated resource's history.

To delete a conformance pack

Deleting Conformance Packs (Console)

1. To delete a conformance pack, select the conformance pack from the table.
2. Choose **Actions** and then choose **Delete**.
3. On the delete *`conformance pack`* dialog box, confirm if you would like to permanently delete this conformance pack.

   > **Important**
   >
   > You cannot revert this action. When you delete a conformance pack, you delete all of the AWS Config rules and remediation actions in that conformance pack.

4. Enter **Delete** and choose **Delete**.

   On the **Conformance packs** page, you can see the deployment status as **Deleting** until the conformance pack is completely deleted.

Deleting Conformance Packs (AWS CLI)

Enter the following command.

```
aws configservice delete-conformance-pack --conformance-pack-name MyConformancePack1
```

If successful, the command runs with no additional output.

> **Important**
>
> You cannot revert this action. When you delete a conformance pack, you delete all of the AWS Config rules and remediation actions in that conformance pack.

Viewing Details and Compliance Information for your Conformance Packs for AWS Config

> **Important**
>
> For accurate reporting on the compliance status, you must record the `AWS::Config::ResourceCompliance` resource type. For more information, see Recording AWS Resources.

You can use the AWS Config console or the AWS CLI to view your conformance packs. The AWS Config console has a unified dashboard. The AWS CLI allows you to run commands for specific information.

Viewing Conformance Packs (Console)

To view your conformance packs in the AWS Management Console, see Conformance Pack Dashboard Pack.

Viewing the Details for your Conformance Packs (AWS CLI)

1. Enter the following command.

```
aws configservice describe-conformance-packs
```

OR

```
aws configservice describe-conformance-packs --conformance-pack-
name="MyConformancePack1"
```

2. You should see output similar to the following.

```
{
    "conformancePackName": "MyConformancePack1",
    "conformancePackId": "conformance-pack-ID",
    "conformancePackArn": "arn:aws:config:us-west-2:AccountID:conformance-
pack/MyConformancePack1/conformance-pack-ID",
    "conformancePackInputParameters": [],
    "lastUpdateRequestedTime": "Thu Jul 18 16:07:05 PDT 2019"
}
```

Viewing the Status for your Conformance Packs (AWS CLI)

1. Enter the following command.

```
aws configservice describe-conformance-pack-status --conformance-pack-
name="MyConformancePack1"
```

2. You should see output similar to the following .

```
{
    "stackArn": "arn:aws:cloudformation:us-west-2:AccountID:stack/
awsconfigconforms-MyConformancePack1-conformance-pack-ID/d4301fe0-
a9b1-11e9-994d-025f28dd83ba",
    "conformancePackName": "MyConformancePack1",
    "conformancePackId": "conformance-pack-ID",
    "lastUpdateCompletedTime": "Thu Jul 18 16:15:17 PDT 2019",
    "conformancePackState": "CREATE_COMPLETE",
    "conformancePackArn": "arn:aws:config:us-west-2:AccountID:conformance-
pack/MyConformancePack1/conformance-pack-ID",
    "lastUpdateRequestedTime": "Thu Jul 18 16:14:35 PDT 2019"
}
```

Viewing the Compliance Status for your Conformance Packs (AWS CLI)

1. Enter the following command.

```
aws configservice describe-conformance-pack-compliance --conformance-pack-
name="MyConformancePack1"
```

2. You should see output similar to the following.

```
{
    "conformancePackName": "MyConformancePack1",
    "conformancePackRuleComplianceList": [
        {
            "configRuleName": "awsconfigconforms-RuleName1-conformance-pack-ID",
            "complianceType": "NON_COMPLIANT"
        },
        {
            "configRuleName": "awsconfigconforms-RuleName2-conformance-pack-ID",
            "complianceType": "COMPLIANT"
```

```
        }
    ]
}
```

Viewing the Compliance Details for your Conformance Packs (AWS CLI)

1. Enter the following command.

```
aws configservice get-conformance-pack-compliance-details --conformance-pack-
name="MyConformancePack1"
```

2. You should see output similar to the following.

```
{
    "conformancePackRuleEvaluationResults": [
        {
            "evaluationResultIdentifier": {
                "orderingTimestamp": "Tue Jul 16 23:07:35 PDT 2019",
                "evaluationResultQualifier": {
                    "resourceId": "resourceID",
                    "configRuleName": "awsconfigconforms-RuleName1-conformance-
pack-ID",
                    "resourceType": "AWS::::Account"
                }
            },
            "configRuleInvokedTime": "Tue Jul 16 23:07:50 PDT 2019",
            "resultRecordedTime": "Tue Jul 16 23:07:51 PDT 2019",
            "complianceType": "NON_COMPLIANT"
        },
        {
            "evaluationResultIdentifier": {
                "orderingTimestamp": "Thu Jun 27 15:16:36 PDT 2019",
                "evaluationResultQualifier": {
                    "resourceId": "resourceID",
                    "configRuleName": "awsconfigconforms-RuleName2-conformance-
pack-ID",
                    "resourceType": "AWS::EC2::SecurityGroup"
                }
            },
           "configRuleInvokedTime": "Thu Jul 11 23:08:06 PDT 2019",
            "resultRecordedTime": "Thu Jul 11 23:08:06 PDT 2019",
            "complianceType": "COMPLIANT"
```

```
        }
    ],
    "conformancePackName": "MyConformancePack1"
}
}
```

Viewing the Compliance History Timeline for Conformance Packs for AWS Config

AWS Config supports storing compliance state changes to your conformance packs. This allows you to view the history of compliance state changes. These compliance state changes are presented as a timeline. The timeline captures changes as `ConfigurationItems` over a period of time. You can also use this feature to find specific rules within a conformance pack that are noncompliant.

You can opt in or out to record all resource types in AWS Config. If you have opted to record all resource types, AWS Config automatically begins recording the conformance pack compliance history as evaluated by AWS Config Rules. By default, AWS Config records the configuration changes for all supported resources. You can also select only the specific conformance pack compliance history resource type: `AWS::Config::ConformancePackCompliance`. Recording for the `AWS::Config::ConformancePackCompliance` resource type is available at no additional charge. For more information, see Recording AWS Resources.

A conformance pack is compliant if all of the rules in a conformance packs are compliant. It is noncompliant if any of the rules are not compliant. The compliance status of a conformance pack is INSUFFICIENT_DATA only if all rules within a conformance pack cannot be evaluated due to insufficient data. If some of the rules in a conformance pack are compliant but the compliance status of other rules in that same conformance pack is INSUFFICIENT_DATA, the conformance pack shows compliant. Compliance for a conformance pack is not evaluated all at one time. Some rules may take a longer time to evaluate than others. Compliance is evaluated for groups of rules at a time, continuing in stages until all the rules in a conformance pack have been evaluated.

Viewing the Compliance Timeline

Access the compliance timeline by selecting a specific conformance pack from the **Conformance pack** main page.

1. Navigate to the **Conformance Pack** page.

2. On the **Conformance Pack** main page, choose a specific conformance pack and then choose **Conformance pack timeline** .

> **Note**
>
> Alternatively, you can use the compliance timeline from the conformance pack's details page. Choose a conformance pack and choose **View details** in the **Actions** dropdown. From this page, choose **Conformance pack timeline**.

The timeline shows you the history of compliance state changes for a conformance pack. You can do the following:

1. Expand a compliance change to view the line-by-line compliance status of each rule within a conformance pack.
2. From the expanded view, choose a specific rule to view its details page.

Querying Compliance History for Conformance Packs for AWS Config

Query the compliance history using get-resource-config-history using the resource type `AWS::Config::ConformancePackCompliance`.

```
aws configservice get-resource-config-history --resource-type
 AWS::Config::ConformancePackCompliance --resource-id conformance-pack-ID
```

You should see output similar to the following:

```
{
    "configurationItems": [
        {
            "version": "1.3",
            "accountId": "Account ID",
            "configurationItemCaptureTime": 1614641951.442,
            "configurationItemStatus": "OK",
            "configurationStateId": "1614641951442",
            "configurationItemMD5Hash": "",
```

```
            "arn": "arn:aws:config:us-east-1:Account ID:conformance-
pack/MyConformancePack1/conformance-pack-ID",
            "resourceType": "AWS::Config::ConformancePackCompliance",
            "resourceId": "conformance-pack-ID",
            "resourceName": "MyConformancePack1",
            "awsRegion": "us-east-1",
            "tags": {},
            "relatedEvents": [],
            "relationships": [],
            "configuration": "{\"compliantRuleCount\":1,\"configRuleList\":
[{\"configRuleName\":\"RuleName1-conformance-pack-ID\",\"controls\":[],\"configRuleArn
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-nnnnnn\",\"complianceType\":\"INSUFFICIENT_DATA\"},
{\"configRuleName\":\"RuleName2-conformance-pack-ID\",\"controls\":[],\"configRuleArn
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-mmmmmm\",\"complianceType\":\"COMPLIANT\"},
{\"configRuleName\":\"RuleName3-conformance-pack-ID\",\"controls\":[],\"configRuleArn
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-pppppp\",\"complianceType\":\"INSUFFICIENT_DATA\"}],
\"totalRuleCount\":3,\"nonCompliantRuleCount\":0,\"complianceType\":\"COMPLIANT\"}",
            "supplementaryConfiguration": {}
        },
        {
            "version": "1.3",
            "accountId": "768311917693",
            "configurationItemCaptureTime": 1605551029.515,
            "configurationItemStatus": "ResourceDiscovered",
            "configurationStateId": "1605551029515",
            "configurationItemMD5Hash": "",
            "resourceType": "AWS::Config::ConformancePackCompliance",
            "resourceId": "conformance-pack-ID",
            "resourceName": "MyConformancePack1",
            "awsRegion": "us-east-1",
            "tags": {},
            "relatedEvents": [],
            "relationships": [],
            "configuration": "{\"compliantRuleCount\":1,\"configRuleList\":
[{\"configRuleName\":\"RuleName1-conformance-pack-ID\",\"controls\":[],\"configRuleArn
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-nnnnnn\",\"complianceType\":\"INSUFFICIENT_DATA\"},
{\"configRuleName\":\"RuleName2-conformance-pack-ID\",\"controls\":[],\"configRuleArn
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-mmmmmm\",\"complianceType\":\"COMPLIANT\"},
{\"configRuleName\":\"RuleName3-conformance-pack-ID\",\"controls\":[],\"configRuleArn
```

```
\":\"arn:aws:config:us-east-1:Account ID:config-rule/aws-service-rule/config-
conforms.amazonaws.com/config-rule-pppppp\",\"complianceType\":\"INSUFFICIENT_DATA\"}],
\"totalRuleCount\":3,\"nonCompliantRuleCount\":0,\"complianceType\":\"COMPLIANT\"}",
            "supplementaryConfiguration": {}
        }
    ]
}
```

For more information, see Supported Resource Types (AWS Config) and GetResourceConfigHistory in the API reference.

Managing Conformance Packs for AWS Config Across all Accounts in Your Organization

Use AWS Config to manage conformance packs across all AWS accounts within an organization. You can do the following:

- Centrally deploy, update, and delete conformance packs across member accounts in an organization in AWS Organizations.
- Deploy a common set of AWS Config rules and remediation actions across all accounts and specify accounts where AWS Config rules and remediation actions should not be created.
- Use the management account in AWS Organizations to enforce governance by ensuring that the underlying AWS Config rules and remediation actions are not modifiable by your organization's member accounts.

Considerations

For deployments across different regions

The API call to deploy rules and conformance packs across accounts is AWS Region specific. At the organization level, you need to change the context of your API call to a different region if you want to deploy rules in other regions. For example, to deploy a rule in US East (N. Virginia), change the region to US East (N. Virginia) and then call `PutOrganizationConfigRule`.

For accounts within an organization

If a new account joins an organization, the rule or conformance pack is deployed to that account. When an account leaves an organization, the rule or conformance pack is removed.

If you deploy an organizational rule or conformance pack in an organization administrator account, and then establish a delegated administrator and deploy an organizational rule or conformance pack in the delegated administrator account, you won't be able to see the organizational rule or conformance pack in the organization administrator account from the delegated administrator account or see the organizational rule or conformance pack in the delegated administrator account from organization administrator account. The DescribeOrganizationConfigRules and DescribeOrganizationConformancePacks APIs can only see and interact with the organization-related resource that were deployed from within the account calling those APIs.

Retry mechanism for new accounts added to an organization

Deployment of existing organizational rules and conformance packs will only be retried for 7 hours after an account is added to your organization if a recorder is not available. You are expected to create a recorder if one doesn't exist within 7 hours of adding an account to your organization.

Organization management accounts, delegated administrators, and service-linked roles

If you are using an organization management account and intend to use a delegated administrator for organizational deployment, be aware that AWS Config won't automatically create the service-linked role (SLR). You must manually create the service-linked role (SLR) separately using IAM.

If you do not have an SLR for your management account, you will not be able to deploy resources to that account from a delegated administrator account. You will still be able to deploy conformance packs to member accounts from management and delegated administrator accounts. For more information, see Using service-linked roles in the *AWS Identity and Access Management (IAM) User Guide*.

Deployment

To deploy with the AWS Management Console

To a deploy a conformance pack across an organization from the AWS console, use AWS Systems Manager. For more information, see Deploy AWS Config conformance packs in the *AWS Systems Manager User Guide*.

To deploy with the AWS API

For information on how to integrate AWS Config with AWS Organizations, see AWS Config and AWS Organizations in the *AWS Organizations User Guide*. Ensure AWS Config recording is on before you use the following APIs to manage conformance pack rules across all AWS accounts within an organization:

- DeleteOrganizationConformancePack, deletes the specified organization conformance pack and all of the config rules and remediation actions from all member accounts in that organization.
- DescribeOrganizationConformancePacks, returns a list of organization conformance packs.
- DescribeOrganizationConformancePackStatuses, provides organization conformance pack deployment status for an organization.
- GetOrganizationConformancePackDetailedStatus, returns detailed status for each member account within an organization for a given organization conformance pack.
- PutOrganizationConformancePack, deploys conformance packs across member accounts in an AWS Organization.

Region Support

Deploying conformance packs across member accounts in an AWS Organization is supported in the following Regions.

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Troubleshooting for Conformance Packs for AWS Config

Check the following issues to help troubleshoot issues you might run into when using conformance packs.

Topics

- Failed status for a conformance pack
- Dangling rules in a conformance pack

Failed status for a conformance pack

If you get an error indicating that the conformance pack failed while creating, updating, or deleting it, you can check the status of your conformance pack.

```
aws configservice describe-conformance-pack-status --conformance-pack-name
 MyConformancePack1
```

You should see output similar to the following.

```
"ConformancePackStatusDetails": [
    {
        "ConformancePackName": "ConformancePackName",
        "ConformancePackId": "ConformancePackId",
        "ConformancePackArn": "ConformancePackArn",
        "ConformancePackState": "CREATE_FAILED",
        "StackArn": "CloudFormation stackArn",
        "ConformancePackStatusReason": "Failure Reason",
        "LastUpdateRequestedTime": 1573865201.619,
        "LastUpdateCompletedTime": 1573864244.653
    }
]
```

Check the **ConformancePackStatusReason** for information about the failure.

When the stackArn is present in the response

If the error message is not clear or if the failure is due to an internal error, go to the AWS CloudFormation console and do the following:

1. Search for the **stackArn** from the output.
2. Choose the **Events** tab of the CloudFormation stack and check for failed events.

   The status reason indicates why the conformance pack failed.

When the stackArn is not present in the response

If you receive a failure while you create a conformance pack but the stackArn is not present in the status response, the possible reason is that the stack creation failed and CloudFormation rolled back and deleted the stack. Go to the CloudFormation console and search for stacks that are in a **Deleted** state. The failed stack might be available there. The CloudFormation stack contains the conformance pack name. If you find the failed stack, choose the **Events** tab of the CloudFormation stack and check for failed events.

If none of these steps worked and if the failure reason is an internal service error, then try operation again or contact the AWS Support Center.

Dangling rules in a conformance pack

Deploying a conformance pack involves the creation of an underlying AWS CloudFormation stack in the background to deploy the rules in the conformance pack template. These rules are service-linked rules and cannot be updated or deleted outside the conformance pack.

If you make changes to the underlying CloudFormation stack, this results in a situation where the conformance pack and its rules become unmanageable. These unmanageable rules are *dangling rules*.

Drift between the CloudFormation stack and the conformance pack

You can update the rule names in a conformance pack template directly from the CloudFormation console. If you update the template directly from the CloudFormation console, this does not update the deployed conformance pack.

This drift creates a dangling rule. If you try to delete the rule from the conformance pack, you receive an error similiar to the following:

```
"An AWS service owns ServiceLinkedConfigRule. You do not have permissions to
 take action on this rule. (Service: AmazonConfig; Status Code: 400; Error Code:
 AccessDeniedException; Request ID: my-request-ID; Proxy: null)".
```

If you try to delete the conformance pack, the dangling rule cannot be deleted and you receive an error similiar to the following:

```
"User: arn:aws:sts::111122223333:assumed-role/AWSServiceRoleForConfigConforms/
AwsConfigConformsWorkflow is not authorized to perform: config:DeleteConfigRule on
 resource: my-dangling-rule
```

To fix this issue, do the following steps:

1. Delete the stack. For more information, see Deleting a stack on the AWS CloudFormation console in the *CloudFormation User Guide*.
2. Delete the conformance pack using the AWS Config console or using the DeleteConformancePack API. If it is an organizational conformance pack and you are using the management or delegated administrator account, use the DeleteOrganizationConformancePack API.
3. Reach out to the AWS Support Center with the Amazon Resource Name (ARN) of the dangling rules in the conformance pack to help clean up your account.

To avoid this issue, remember these best practices:

- Never make any direct updates to the CloudFormation stack of a conformance pack.
- Never try and make changes which create drift between the conformance pack and its underlying CloudFormation stack.
- The service-linked role (SLR) for conformance packs cannot be modified. Make sure the resources you are updating are part of the permissions policy for the SLR.

Deleted CloudFormation stack for a conformance pack

Unless there is drift between the CloudFormation stack and the conformance pack, it is never recommended to delete rules in a conformance pack or its CloudFormation stack directly from the CloudFormation console.

To fix this issue, reach out to the AWS Support Center with the Amazon Resource Name (ARN) of the dangling rules in the conformance pack to help clean up your account.

To avoid this issue, remember these best practices:

- Never delete the underlying CloudFormation stack for a conformance pack.

- Delete conformance packs using the DeleteConformancePack API. If it is an organizational conformance pack and you are using the management or delegated administrator account, use the DeleteOrganizationConformancePack API.

Remediating Noncompliant Resources with AWS Config

AWS Config allows you to remediate noncompliant resources that are evaluated by AWS Config Rules. AWS Config applies remediation using AWS Systems Manager Automation documents. These documents define the actions to be performed on noncompliant AWS resources evaluated by AWS Config Rules. You can associate SSM documents by using AWS Management Console or by using APIs.

AWS Config provides a set of managed automation documents with remediation actions. You can also create and associate custom automation documents with AWS Config rules.

Topics

- Region Support
- Setting Up Manual Remediation for AWS Config
- Setting Up Auto Remediation for AWS Config
- Deleting Remediation Actions for AWS Config

Region Support

Currently, remediation actions for AWS Config Rules is supported in the following regions:

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS	

Setting Up Manual Remediation for AWS Config

To apply remediation on noncompliant resources, you can either choose the remediation action you want to associate from a prepopulated list or create your own custom remediation actions using SSM documents. AWS Config provides a recommended list of remediation action in the AWS Management Console.

Setting Up Manual Remediation (Console)

In the AWS Management Console, you can either choose to manually remediate noncompliant resources by associating remediation actions with AWS Config rules. With all remediation actions, you can either choose manual or automatic remediation.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Rules** on the left and then on the **Rules** page, choose **Add Rule** to add new rules to the rule list

   For existing rules, select the noncompliant rule from the rule list and choose the **Actions** dropdown list.
3. From the **Actions** dropdown list, choose **Manage remediation**. Select "Manual remediation" and then choose the appropriate remediation action from the recommended list.

> **Note**
>
> You can only manage remediations for non-service linked AWS Config rules. For more information, see Service-Linked AWS Rules.

Depending on the selected remediation action, you see specific parameters or no parameters.

4. (Optional): If you want to pass the resource ID of noncompliant resources to the remediation action, choose **Resource ID parameter**. If selected, at runtime that parameter is substituted with the ID of the resource to be remediated.

   Each parameter has either a static value or a dynamic value. If you do not choose a specific resource ID parameter from the dropdown list, you can enter values for each key. If you choose a resource ID parameter from the dropdown list, you can enter values for all the other keys except the selected resource ID parameter.

5. Choose **Save**. The **Rules** page is displayed.

For troubleshooting failed remediation actions, you can run the AWS Command Line Interface command `describe-remediation-execution-status` to get detailed view of a Remediation Execution for a set of resources. The details include state, timestamps for remediation execution steps, and any error messages for the failed steps.

Setting Up Manual Remediation (API)

Use the following AWS Config API operation to set up manual remediation:

- PutRemediationConfigurations, adds or updates the remediation configuration with a specific AWS Config rule with the selected target or action.
- StartRemediationExecution, runs an on-demand remediation for the specified AWS Config rules against the last known remediation configuration.
- DescribeRemediationExecutionStatus, provides a detailed view of a Remediation Execution for a set of resources including state, timestamps for when steps for the remediation execution occur, and any error messages for steps that have failed.
- DescribeRemediationConfigurations, returns the details of one or more remediation configurations.

Setting Up Auto Remediation for AWS Config

To apply remediation on noncompliant resources, you can either choose the remediation action you want to associate from a prepopulated list or create your own custom remediation actions

using SSM documents. AWS Config provides a list of remediation action in the AWS Management Console.

Setting Up Auto Remediation (Console)

In the AWS Management Console, you can either choose to automatically remediate noncompliant resources by associating remediation actions with AWS Config rules. With all remediation actions, you can either choose manual or automatic remediation.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Rules** on the left and then on the **Rules** page, choose **Add Rule** to add new rules to the rule list.

   For existing rules, select the noncompliant rule from the rule list and choose the **Actions** dropdown list.
3. From the **Actions** dropdown list, choose **Manage remediation**. Select "Automatic remediation" and then choose the appropriate remediation action from the list.

   > **Note**
   >
   > You can only manage remediations for non-service linked AWS Config rules. For more information, see Service-Linked AWS Rules.

   Depending on the selected remediation action, you see specific parameters or no parameters.
4. Choose **Auto remediation** to automatically remediate noncompliant resources.

   If a resource is still noncompliant after auto remediation, you can set the rule to try auto remediation again. Enter the desired retries and seconds.

   > **Note**
   >
   > There are costs associated with running a remediation script multiple times. Retries only occur if remediation fails and work within the specified time period; for example, 5 retries in 300 seconds. For more information, see Systems Manager Automation Pricing .

5. (Optional): If you want to pass the resource ID of noncompliant resources to the remediation action, choose **Resource ID parameter**. If selected, at runtime that parameter is substituted with the ID of the resource to be remediated.

   Each parameter has either a static value or a dynamic value. If you do not choose a specific resource ID parameter from the dropdown list, you can enter values for each key. If you choose a resource ID parameter from the dropdown list, you can enter values for all the other keys except the selected resource ID parameter.

6. Choose **Save**. The **Rules** page is displayed.

For troubleshooting failed remediation actions

For troubleshooting failed remediation actions, you can run the AWS Command Line Interface command `describe-remediation-execution-status` to get detailed view of a Remediation Execution for a set of resources. The details include state, timestamps for remediation execution steps, and any error messages for the failed steps.

Auto remediation can be initiated even for compliant resources

If you enable auto remediation for a specific AWS Config rule using the PutRemediationConfigurations API or the AWS Config console, it initiates the remediation process for all noncompliant resources for that specific rule. The auto remediation process relies on the compliance data snapshot which is captured on a periodic basis. Any noncompliant resource that is updated between the snapshot schedule will continue to be remediated based on the last known compliance data snapshot.

This means that in some cases auto remediation can be initiated even for compliant resources, since the bootstrap processor uses a database that can have stale evaluation results based on the last known compliance data snapshot.

Setting Up Auto Remediation (API)

Use the following AWS Config API operation to set up auto remediation:

- PutRemediationExceptions, adds a new exception or updates an existing exception for a specific resource with a specific AWS Config rule.
- DescribeRemediationExceptions, returns the details of one or more remediation exceptions.

Deleting Remediation Actions for AWS Config

You can use the AWS Config console or the AWS CLI to delete remediation actions.

Deleting remediation actions (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Rules** on the left and then on the **Rules** page, select the rule from the rule list and choose **View details**.
3. On the *name of the rule* page, go to the **Remediation action** section. Expand the section to view additional details.
4. In the **Remediation action** section, choose **Delete** and confirm your delete action.

   > **Note**
   >
   > If remediation is in progress, a remediation action won't be deleted. Once you choose delete a remediation action, you cannot retrieve the remediation action. Deleting a remediation action does not delete the associated rule.

   If a remediation action is deleted, the **Resource ID parameter** will be empty and display N/A. On the **Rules** page, the remediation action column displays **Not set** for the associated rule.

Deleting remediation actions (API)

Use the following AWS Config API operation to set up auto remediation:

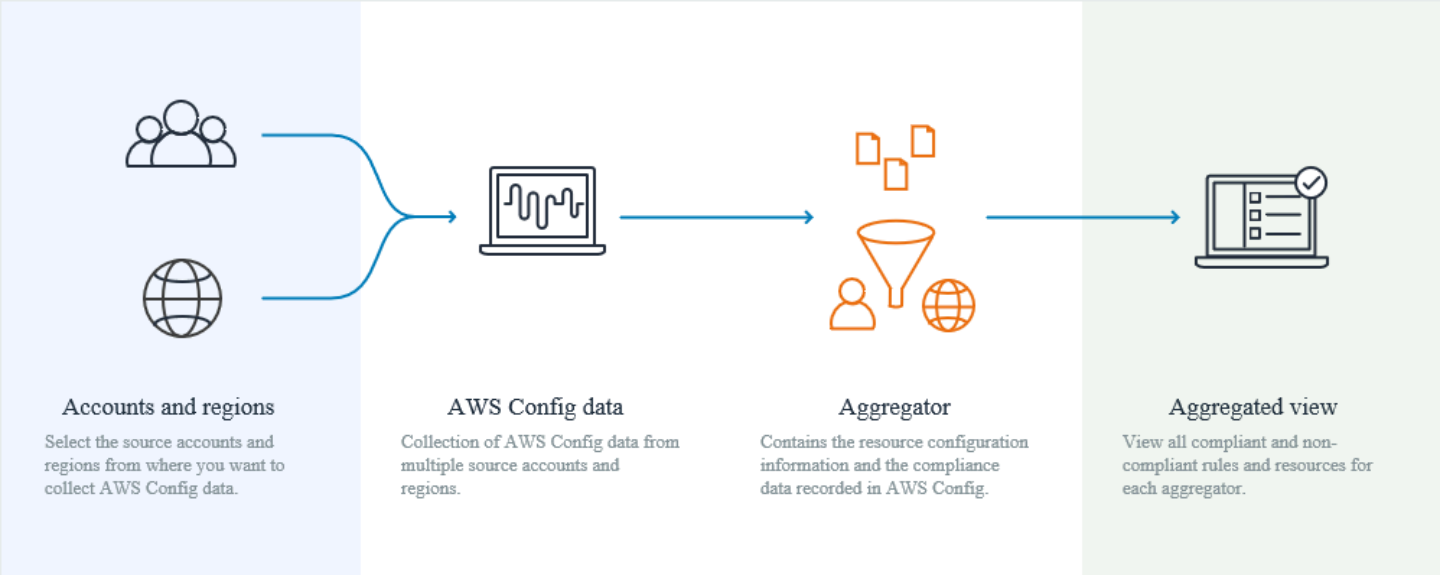
- DeleteRemediationConfiguration, deletes the remediation configuration.
- DeleteRemediationExceptions, deletes one or more remediation exceptions mentioned in the resource keys.

Multi-Account Multi-Region Data Aggregation for AWS Config

An aggregator is an AWS Config resource type that collects AWS Config configuration and compliance data from the following:

- Multiple accounts and multiple AWS Regions.
- Single account and multiple AWS Regions.
- An organization in AWS Organizations and all the accounts in that organization which have AWS Config enabled.

Use an aggregator to view the resource configuration and compliance data recorded in AWS Config. The following image displays how an aggregator collects AWS Config data from multiple accounts and Regions.



Use Cases

- **Compliance Monitoring**: You can aggregate compliance data to assess the overall compliance postures of your organization, or across accounts and Regions.
- **Change Tracking**: You can track changes to resources over time across your organization, or across accounts and Regions.

- **Resource Relationships**: You can analyze resource dependencies and relationships across your organization, or across accounts and Regions.

> **Note**
>
> Aggregators provide a *read-only view* into the source accounts and Regions that the aggregator is authorized to view by replicating data from the source accounts into the aggregator account. Aggregators do not provide mutating access into a source account or region. For example, this means that you cannot deploy rules through an aggregator or push snapshot files to a source account or region through an aggregator.
> Using aggregators does not incur any additional costs.

Terminology

A *source account* is the AWS account from which you want to aggregate AWS Config resource configuration and compliance data. A source account can be an individual account or an organization in AWS Organizations. You can provide source accounts individually or you can retrieve them through AWS Organizations.

A *source region* is the AWS Region from which you want to aggregate AWS Config configuration and compliance data.

An *aggregator account* is an account where you create an aggregator.

Authorization refers to the permissions you grant to an aggregator account and region to collect your AWS Config configuration and compliance data. Authorization is not required if you are aggregating source accounts that are part of AWS Organizations.

A *service-linked aggregator* is linked to a specific AWS service. The configuration and compliance data in scope are set by the linked service.

Region Support

Currently, multi-account multi-region data aggregation is supported in the following Regions:

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS	
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS	
Asia Pacific	ap-southeast-5	config.ap-southeast-5.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
(Malaysia)				
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Thailand)	ap-southeast-7	config.ap-southeast-7.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS	
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS	
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS	
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Mexico (Central)	mx-central-1	config.mx-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Viewing Compliance and Inventory Data in the Aggregator Dashboard for AWS Config

The dashboard on the **Aggregators** page displays the configuration data of your aggregated AWS resources. It provides an overview of your rules, conformance packs, and their compliance states.

The dashboard provides the total resource count of AWS resources. The resource types and source accounts are ranked by the highest number of resources. It also provides a count of compliant and noncompliant rules and conformance packs. The noncompliant rules are ranked by highest number of noncompliant resources. The noncompliant conformance packs and source accounts are ranked by the highest number of noncompliant rules.

After setting up AWS Config, it starts aggregating data from the specified source accounts into an aggregator. It might take a few minutes for the compliance status of rules to display.

Using the Aggregator Dashboard

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Aggregators** page. You can view:
   - Your rules and their compliance states.
   - Your conformance packs and their compliance states.
   - Your AWS resources and their configuration data.
3. Choose an aggregator from the dashboard. Filter through your aggregators by aggregator name. You can view the following widgets:
   - **Resource inventory**

     View the top 10 resource types from the selected aggregator, in descending order by the resource count. Choose the total number of resources for the selected aggregator, displayed in parentheses after **Resource inventory**, to go to the aggregated **Resources** page, where you can view all the resources for an aggregator. Alternatively, choose a resource type in the widget to go to the aggregated **Resources** page, filtered using the specified resource type.
   - **Accounts by resource count**

     View the top five accounts from the selected aggeregator in the descending order by the resource count. Choose an account in the widget to go to the **Resources** page, filtered using the specified account.
   - **Noncompliant rules**

     View the top five noncompliant rules from the selected Aggregator, in descending order by the number of noncompliant resources. Choose a rule in the widget to go to the details page

for the specified rule. Choose **View all noncompliant rules** to go to the aggregated **Rules** page, where you can view all the rules for an aggregator.

- **Accounts by noncompliant rules**

  View the top five accounts from the selected aggregator, in descending order by the number of noncompliant rules. Choose an account in the widget to go to the aggregated **Rules** page, where you can view all the rules for an aggregator filtered using the specified account.

- **Accounts by noncompliant conformance packs**

  View the top five accounts from the selected aggregagtor, in descending order by the number of noncompliant conformance packs. Choose an account in the widget to go to the aggregated **Conformance Pack** page, where you can view all conformance packs for an aggregagtor filtered using the specified account.

4. In the left navigation pane, choose one of the following options from the dropdown menu:

   - **Compliance dashboard**

     View automated compliance dashboards by using the widgets that summarize insights about resource compliance within your aggregator. You can see data such as the top 10 resource types by noncompliant resources, and top 10 account level conformance packs by noncompliant rules. For information about these graphs and charts, see Compliance dashboards.

   - **Conformance packs**

     View all conformance packs that are created and linked to the different AWS accounts within your aggregator. The **Conformance Pack** page displays a table that lists the name, Region, account ID, and compliance status of each conformance pack. From this page, you can choose a conformance pack and **View details** for more information about its rules and resources and their compliance status.

   - **Rules**

     View all rules that are created and linked to the different AWS accounts within your aggregator. The **Rules** page displays a table that lists the name, compliance status, Region, and account of each rule. From this page, you can choose a rule and **View details** for information, such as its aggregator, Region, account ID, and resources in scope.

   - **Inventory dashboard**

View automated inventory dashboards by using the widgets that summarize insights about resource configuration data within your aggregator. You can see data such as the top 10 resource types by resource count, and the top 10 accounts by resource count. For information about these graphs and charts, see Inventory dashboards.

- **Resources**

  View all resources that are recorded and linked to the different AWS accounts within your aggregator. From the **Resource** page, choose a resource and **View details** to view its details, the rules associated with it, and the current resource configuration. You can also see information about the resource, such as its aggregator, Region, account ID, resource name, resource type, and resource ID.

- **Authorizations**

  View and manage all accounts currently authorized or pending authorization. From the **Authorizations** page, choose **Add authorization** to provide access to another account. Choose **Delete authorization** to revoke access from an account ID.

> **Note**
>
> **Troubleshooting**
>
> You might see the **Data collection from all source accounts and regions is incomplete** message displayed in the aggregated view for the following reasons:
>
> - The transfer of noncompliant AWS Config rules and configuration data of AWS resources is in progress.
> - AWS Config can't find rules to match the filter that you applied. Select the appropriate account or Region, and try again.
>
> You might see this message display in the aggregated view: **Data collection from your organization is incomplete. You can view the below data only for 24 hours.** It displays for the following reasons:
>
> - AWS Config can't access your organization details because of an IAM role that is not valid. If the IAM role remains not valid for more than 24 hours, AWS Config deletes the data for the entire organization.

- AWS Config service access is disabled in your organization.

Compliance Dashboard

View automated compliance dashboards by using widgets that summarize insights about resource compliance within your aggregator This dashboard displays only rules with compliance results.

> **Note**
>
> **Limitations**
>
> The insights in the compliance dashboard are provided by the Advanced Queries feature of AWS Config, and this feature does not support nested structures or unpacking nested arrays. This means that the compliance dashboard displays the overall compliance of a resource and not the compliance status for each specific rule which reports on a resource. For example, if you check the configuration item (CI) for the resource type `AWS::Config::ResourceCompliance`, the dashboard will display the compliance results for all the rules that report on that resource. If there are 10 rules that report on the resource, 9 of them are COMPLIANT, and only 1 is NON_COMPLIANT, the overall compliance of that resource will be NON_COMPLIANT.

Compliance Summary By Resources

Displays a pie chart comparing the number of compliant resources to noncompliant resources from the selected aggregator. Hover over the chart to see the exact number and percentage of compliant and noncompliant resources.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator, and the Regions where the selected aggregator is configured to collect data.

Top 10 resource types by noncompliant resources

Displays a horizontal bar graph comparing up to 10 resource types from the selected aggregator in descending order by the number of noncompliant resources. Hover over the graph to see the exact number of noncompliant resources for each resource type.

The data displayed is dependent on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data.

Top 10 accounts by noncompliant resources

Top 10 accounts by noncompliant resources displays a horizontal bar graph comparing up to 10 accounts from the selected aggregator in descending order by the number of noncompliant resources. Hover over the graph to see the exact number of noncompliant resources for each account.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator, and the Regions where the selected aggregator is configured to collect data.

Top 10 regions by noncompliant resources

Displays a horizontal bar graph comparing up to 10 Regions where the selected aggregator collects data in descending order by the number of noncompliant resources. Hover over the graph to see the exact number of noncompliant resources for each Region.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator.

Top 10 account level conformance packs by noncompliant rules

Displays a horizontal bar graph comparing up to 10 account level conformance packs from the selected aggregator in descending order by the number of noncompliant rules. Hover over the graph to see the percentage of compliant and noncompliant rules for each account level conformance pack.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator, and the Regions where the selected aggregator is configured to collect data.

Top 10 organization level conformance packs by noncompliant rules

Displays a horizontal bar graph comparing up to 10 organizational level conformance packs from the selected aggregator in descending order by the number of noncompliant rules. Hover over the graph to see the percentage of compliant and noncompliant rules in each organizational level conformance pack.

The data displayed is dependent on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data.

Top 10 accounts by noncompliant rules across conformance packs

Top 10 accounts by noncompliant rules across conformance packs displays a horizontal bar graph comparing up to 10 accounts from the selected aggregator in descending order by the number of noncompliant rules across all your conformance packs. Hover over the graph to see the exact number of noncompliant rules in each account.

The data displayed is dependent on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data.

Inventory Dashboard

View automated inventory dashboards by using widgets that summarize insights about resource configuration data within your aggregator.

Top 10 resource types by resource count

Displays a horizontal bar graph comparing up to 10 resource types from the selected aggregator in descending order by resource count. Hover over the graph to see the exact number of resources for each resource type.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator, and the Regions where the selected aggregator is configured to collect data.

Resource count by region

Displays a horizontal bar graph comparing up to 10 Regions where the selected aggregator collects data in descending order by resource count. Hover over the graph to see the exact number of resources for each Region.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator.

Top 10 accounts by resource count

Displays a horizontal bar graph comparing up to 10 accounts from the selected aggregator in descending order by resource count. Hover over the graph to see the exact number resources for each resource type.

The data displayed is dependent on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data.

Resource count by Amazon EC2 service resource types

Displays a horizontal bar graph comparing Amazon EC2 resource types from the selected aggregator in descending order by resource count. Hover over the graph to see the exact number of resources for each Amazon EC2 resource type.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator, and the Regions where the selected aggregator is configured to collect data. To use this chart, you must configure the recorder to record Amazon EC2 resource types. For more information, see Selecting Which Resources AWS Config Records.

Top 10 EC2 instance types used

Displays a horizontal bar graph comparing up to 10 Amazon EC2 instance types from the selected aggregator in descending order by usage. Hover over the graph to see usage for each EC2 instance type.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data. To use this chart, you must configure the recorder to record the EC2 instance resource type. For more information, see Recoding AWS Resources.

EBS Volume counts by volume type and size

Displays a vertical bar graph comparing EBS volumes from the selected aggregator by resource count. Hover over the graph to see the count and size breakdown for each type of EBS volume.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data. To use this chart, you must configure the recorder to record the EC2 volume resource type. For more information, see Selecting Which Resources AWS Config Records.

Number of EC2 instances that are running vs. stopped by type

Displays a horizontal bar graph comparing EC2 instance types from the selected aggregator that are running to EC2 instances that are stopped by instance type. Hover over the graph to see the exact number of stopped and running EC2 instances for each type.

The data displayed depends on the settings of the configuration recorder for each account in the selected aggregator and the Regions where the selected aggregator is configured to collect data. To use this chart, you must configure the recorder to record the EC2 instance resource type. For more information, see Recoding AWS Resources.

Creating Aggregators for AWS Config

You can use the AWS Config console or the AWS CLI to create your aggregators. From the AWS Config you can choose **Add individual account IDs** or **Add my organization** from where you want to aggregate data. For the AWS CLI there are two different procedures.

Creating Aggregators (Console)

On the **Aggregator** page, you can create an aggregator by specifying the source account IDs or organization and regions from where you want to aggregate data.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Aggregators** page and choose **Create aggregator**.
3. **Allow data replication**, gives permission to AWS Config to replicate data from the source accounts into an aggregator account.

   Choose **Allow AWS Config to replicate data from source account(s) into an aggregator account. You must select this checkbox to continue to add an aggregator**.
4. For **Aggregator name**, type the name for your aggregator.

   The aggregator name must be a unique name with a maximum of 64 alphanumeric characters. The name can contain hyphens and underscores.
5. For **Select source accounts**, either choose **Add individual account IDs** or **Add my organization** from where you want to aggregate data.

> **Note**
>
> Authorization is required when using **Add individual account IDs** to select source accounts.

- If you choose **Add individual account IDs**, you can add individual account IDs for an aggregator account.
  1. Choose **Add source accounts** to add account IDs.
  2. Choose **Add AWS account IDs** to manually add comma-separated AWS account IDs. If you want to aggregate data from the current account, type the account ID of the account.

     OR

     Choose **Upload a file** to upload a file (.txt or .csv) of comma-separated AWS account IDs.
  3. Choose **Add source accounts** to confirm your selection.
- If you choose **Add my organization**, you can add all accounts in your organization to an aggregator account.

> **Note**
>
> You must be signed in to the management account or a registered delegated administrator and all the features must be enabled in your organization. If the caller is a management account, AWS Config calls `EnableAwsServiceAccess` API to enable integration between AWS Config and AWS Organizations.
> If the caller is a registered delegated administrator, AWS Config calls `ListDelegatedAdministrators` API to verify whether the caller is a valid delegated administrator.
> Ensure that the management account registers delegated administrator for AWS Config service principal name (config.amazonaws.com) before the delegated administrator creates an aggregator. To register a delegated administrator, see Registering a Delegated Administrator for AWS Config.

You must assign an IAM role to allow AWS Config to call read-only APIs for your organization.

1. Choose **Choose a role from your account** to select an existing IAM role.

> **Note**
>
> In the IAM console, attach the `AWSConfigRoleForOrganizations` managed policy to your IAM role. Attaching this policy allows AWS Config to call AWS Organizations `DescribeOrganization`, `ListAWSServiceAccessForOrganization`, and `ListAccounts` APIs. By default `config.amazonaws.com` is automatically specified as a trusted entity.

2. Or, choose **Create a role** and type a name for your IAM role name to create IAM role.

6. For **Regions**, choose the regions for which you want to aggregate data.
   - Select one region or multiple regions or all the AWS Regions.
   - Select **Include future AWS Regions** to aggregate data from all future AWS Regions where multi-account multi-region data aggregation is enabled.
7. Choose **Save**. AWS Config displays the aggregator.

Creating Aggregators using Individual Accounts (AWS CLI)

1. Open a command prompt or a terminal window.
2. Enter the following command to create an aggregator named **`MyAggregator`**.

```
aws configservice put-configuration-aggregator --configuration-aggregator-name
 MyAggregator --account-aggregation-sources "[{\"AccountIds\": [\"AccountID1\",
\"AccountID2\",\"AccountID3\"],\"AllAwsRegions\": true}]"
```

For `account-aggregation-sources`, enter one of the following.

- A comma-separated list of AWS account IDs for which you want to aggregate data. Wrap the account IDs in square brackets, and be sure to escape quotation marks (for example, `"[{\"AccountIds\": [\"AccountID1\",\"AccountID2\",\"AccountID3\"], \"AllAwsRegions\": true}]"`).

- You can also upload a JSON file of comma-separated AWS account IDs. Upload the file using the following syntax: `--account-aggregation-sources` *`MyFilePath/MyFile.json`*

  The JSON file must be in the following format:

```
[
    {
        "AccountIds": [
            "AccountID1",
            "AccountID2",
            "AccountID3"
        ],
        "AllAwsRegions": true
    }
]
```

3. Press Enter to execute the command.

   You should see output similar to the following:

```
{
    "ConfigurationAggregator": {
        "ConfigurationAggregatorArn": "arn:aws:config:Region:AccountID:config-
aggregator/config-aggregator-floqpus3",
        "CreationTime": 1517942461.442,
        "ConfigurationAggregatorName": "MyAggregator",
        "AccountAggregationSources": [
            {
                "AllAwsRegions": true,
                "AccountIds": [
                    "AccountID1",
                    "AccountID2",
                    "AccountID3"
                ]
            }
        ],
        "LastUpdatedTime": 1517942461.442
    }
}
```

Creating Aggregators using AWS Organizations (AWS CLI)

Before you begin this procedure, you must be signed in to the management account or a registered delegated administrator and all the features must be enabled in your organization.

> **Note**
>
> Ensure that the management account registers a delegated administrator with both of the following AWS Config service principal names (`config.amazonaws.com` and`config-multiaccountsetup.amazonaws.com`) before the delegated administrator creates an aggregator. To register a delegated administrator, see Registering a Delegated Administrator for AWS Config.

1. Open a command prompt or a terminal window.
2. If have not created an IAM role for your AWS Config aggregator, enter the following command:

```
aws iam create-role --role-name OrgConfigRole --assume-role-policy-document
 "{\"Version\":\"2012-10-17\",\"Statement\":[{\"Sid\":\"\",\"Effect\":\"Allow\",
\"Principal\":{\"Service\":\"config.amazonaws.com\"},\"Action\":\"sts:AssumeRole
\"}]}" --description "Role for organizational AWS Config aggregator"
```

> **Note**
>
> Copy the Amazon Resource Name (ARN) from this IAM role for use when you create your AWS Config aggregator. You can find the ARN on the response object.

3. If have not attached a policy to your IAM role, attach the AWSConfigRoleForOrganizations managed policy or enter the following command:

```
aws iam create-policy --policy-name OrgConfigPolicy --policy-document
 '{"Version":"2012-10-17","Statement":[{"Effect":"Allow","Action":
["organizations:ListAccounts","organizations:DescribeOrganization","organizations:ListAW
```

4. Enter the following command to create an aggregator named **`MyAggregator`**.

```
aws configservice put-configuration-aggregator --configuration-aggregator-name
 MyAggregator --organization-aggregation-source "{\"RoleArn\": \"Complete-Arn\",
\"AllAwsRegions\": true}"
```

5. Press Enter to execute the command.

   You should see output similar to the following:

```
{
    "ConfigurationAggregator": {
        "ConfigurationAggregatorArn": "arn:aws:config:Region:AccountID:config-
aggregator/config-aggregator-floqpus3",
        "CreationTime": 1517942461.442,
        "ConfigurationAggregatorName": "MyAggregator",
        "OrganizationAggregationSource": {
                "AllAwsRegions": true,
                "RoleArn": "arn:aws:iam::account-of-role-to-assume:role/name-of-
role"
         },
        "LastUpdatedTime": 1517942461.442
    }
}
```

Registering a Delegated Administrator for AWS Config

Delegated administrators are accounts within a given AWS Organization that are granted additional administrative privileges for a specified AWS service. For more information, see Delegated administrator in the *AWS Organizations User Guide*. You must use the AWS CLI to register a delegated administrator.

Registering a Delegated Administrator

1. Log in with management account credentials.
2. Open a command prompt or a terminal window.
3. Enter the following command to enable service access as a delegated administrator for your organization to deploy and manage AWS Config rules and conformance packs across your organization:

```
aws organizations enable-aws-service-access --service-principal=config-
multiaccountsetup.amazonaws.com
```

4. Enter the following command to enable service access as a delegated administrator for your organization to aggregate AWS Config data across your organization:

```
aws organizations enable-aws-service-access --service-
principal=config.amazonaws.com
```

5. To check if the enable service access is complete, enter the following command and press Enter to execute the command.

```
aws organizations list-aws-service-access-for-organization
```

You should see output similar to the following:

```
{
    "EnabledServicePrincipals": [
        {
            "ServicePrincipal": [
                "config.amazonaws.com",
                "config-multiaccountsetup.amazonaws.com"
        ],
            "DateEnabled": 1607020860.881
        }
    ]
}
```

6. Next, enter the following command to register a member account as a delegated administrator for AWS Config.

```
aws organizations register-delegated-administrator --service-principal=config-
multiaccountsetup.amazonaws.com --account-id MemberAccountID
```

and

```
aws organizations register-delegated-administrator --service-
principal=config.amazonaws.com --account-id MemberAccountID
```

7. To check if the registration of delegated administrator is complete, enter the following command from the management account and press Enter to execute the command.

```
aws organizations list-delegated-administrators --service-principal=config-
multiaccountsetup.amazonaws.com
```

and

```
aws organizations list-delegated-administrators --service-
principal=config.amazonaws.com
```

You should see output similar to the following:

```
{
    "DelegatedAdministrators": [
        {
            "Id": "MemberAccountID",
            "Arn": "arn:aws:organizations::ManagementAccountID:account/o-
c7esubdi38/MemberAccountID",
            "Email": "name@amazon.com",
            "Name": "name",
            "Status": "ACTIVE",
            "JoinedMethod": "INVITED",
            "JoinedTimestamp": 1604867734.48,
            "DelegationEnabledDate": 1607020986.801
        }
    ]
}
```

Editing Aggregators for AWS Config

You can use the AWS Config console or the AWS CLI to edit your aggregators.

Editing Aggregators (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Aggregator** page, and choose the aggregator name.
3. Choose **Actions** and then choose **Edit**.

4. Use the sections on the **Edit aggregator** page to change the source accounts, IAM roles, or regions for the aggregator.

> **Note**
>
> You cannot change source type from individual account(s) to organization and vice versa.

5. Choose **Save**.

Editing Aggregators (AWS CLI)

1. You can use the `put-configuration-aggregator` command to update or edit a configuration aggregator.

   Enter the following command to add a new account ID to **`MyAggregator`**:

```
aws configservice put-configuration-aggregator --configuration-aggregator-name
 MyAggregator --account-aggregation-sources "[{\"AccountIds\": [\"AccountID1\",
\"AccountID2\",\"AccountID3\"],\"AllAwsRegions\": true}]"
```

2. Depending on your source account you should see output similar to the following:

   For individuals accounts

```
{
    "ConfigurationAggregator": {
        "ConfigurationAggregatorArn": "arn:aws:config:Region:AccountID:config-
aggregator/config-aggregator-xz2upuu6",
        "CreationTime": 1517952090.769,
        "ConfigurationAggregatorName": "MyAggregator",
        "AccountAggregationSources": [
            {
                "AllAwsRegions": true,
                "AccountIds": [
                    "AccountID1",
                    "AccountID2",
                    "AccountID3",
                    "AccountID4"
                ]
            }
```

```
        ],
        "LastUpdatedTime": 1517952566.445
    }
}
```

OR

For an organization

```
{
    "ConfigurationAggregator": {
        "ConfigurationAggregatorArn": "arn:aws:config:Region:AccountID:config-
aggregator/config-aggregator-floqpus3",
        "CreationTime": 1517942461.442,
        "ConfigurationAggregatorName": "MyAggregator",
        "OrganizationAggregationSource": {
                "AllAwsRegions": true,
                "RoleArn": "arn:aws:iam::account-of-role-to-assume:role/name-of-
role"
         },
        "LastUpdatedTime": 1517942461.442
    }
}
```

Deleting Aggregators for AWS Config

You can use the AWS Config console or the AWS CLI to delete your aggregators.

Deleting Aggregators (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Aggregator** page, and choose the aggregator name.
3. Choose **Actions** and then choose **Delete**.

   A warning message is displayed. Deleting an aggregator results in the loss of all aggregated data. You cannot recover this data but data in the source account(s) is not impacted.
4. Choose **Delete** to confirm your selection.

Deleting Aggregators (AWS CLI)

Enter the following command:

```
aws configservice delete-configuration-aggregator --configuration-aggregator-name
 MyAggregator
```

If successful, the command executes with no additional output.

Authorizing Aggregator Accounts to Collect AWS Config Configuration and Compliance Data

Authorization refers to the permissions you grant to an aggregator account and region to collect your AWS Config configuration and compliance data. Authorization is not required if you are aggregating source accounts that are part of AWS Organizations. You can use the AWS Config console or the AWS CLI to authorize aggregator accounts.

Topics

- Considerations
- Adding Authorization

Considerations

There are two types of aggregators: Individual account aggregator and Organization aggregator

For an individual account aggregator, authorization is required for all source accounts and Regions that you want to include, including both external accounts and Regions and Organization member accounts and Regions.

For an organization aggregator, authorization is not required for Organization member account regions since authorization is integrated with the AWS Organizations service.

Aggregators do not automatically enable AWS Config on your behalf

AWS Config needs to be enabled in the source account and Region for either type of aggregator, in order for AWS Config data to be generated in the source account and Region.

Adding Authorization

Adding Authorization (Console)

You can add authorization to grant permission to aggregator accounts and Regions to collect AWS Config configuration and compliance data.

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Navigate to the **Authorizations** page and choose **Add authorization**.
3. For **Aggregator account**, type the 12-digit account ID of an aggregator account.
4. For **Aggregator region**, choose the AWS Regions where the aggregator account is allowed to collect AWS Config configuration and compliance data.
5. Choose **Add authorization** to confirm your selection.

   AWS Config displays an aggregator account, Region, and authorization status.

   > **Note**
   >
   > You can also add authorizations to aggregator accounts and Regions programatically using AWS CloudFormation sample templates. For more information, see AWS::Config::AggregationAuthorization in the *AWS CloudFormation User Guide*.

Authorizing a Pending Request (Console)

If you have a pending authorization request from an existing aggregator account you will see the request status on the **Authorizations** page. You can authorize a pending request from this page.

1. Choose the aggregator account that you want to authorize, and then choose **Authorize**.

   A confirmation message is displayed to confirm that you want to grant the aggregator account permission to collect AWS Config data from this account.
2. Choose **Authorize** again to confirm that you want to grant permission to the aggregator account.

The authorization status changes from **Requesting for authorization** to **Authorized**.

Authorization approval period

Authorization approval is required to add source accounts to an individual account aggregator. A pending authorization approval request will be available for 7 days after an individual account aggregator adds a source account.

Adding Authorization (AWS CLI)

1. Open a command prompt or a terminal window.
2. Enter the following command:

```
aws configservice put-aggregation-authorization --authorized-account-id
  AccountID --authorized-aws-region Region
```

3. You should see output similar to the following:

```
{
    "AggregationAuthorization": {
        "AuthorizedAccountId": "AccountID",
        "AggregationAuthorizationArn":
 "arn:aws:config:Region:AccountID:aggregation-authorization/AccountID/Region",
        "CreationTime": 1518116709.993,
        "AuthorizedAwsRegion": "Region"
    }
}
```

Deleting Authorization for Aggregator Accounts to Collect AWS Config Configuration and Compliance Data

Authorization refers to the permissions you grant to an aggregator account and region to collect your AWS Config configuration and compliance data. Authorization is not required if you are aggregating source accounts that are part of AWS Organizations. You can use the AWS Config console or the AWS CLI to delete authorizations.

Topics

- Considerations
- Deleting Authorization

Considerations

There are two types of aggregators: Individual account aggregator and Organization aggregator

For an individual account aggregator, authorization is required for all source accounts and Regions that you want to include, including both external accounts and Regions and Organization member accounts and Regions.

For an organization aggregator, authorization is not required for Organization member account regions since authorization is integrated with the AWS Organizations service.

Aggregators do not automatically enable AWS Config on your behalf

AWS Config needs to be enabled in the source account and Region for either type of aggregator, in order for AWS Config data to be generated in the source account and Region.

Deleting Authorization

Deleting Authorization (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose the aggregator account that you want to delete authorization, and then choose **Delete**.

   A warning message is displayed. When you delete this authorization, AWS Config data will no longer be shared with the aggregator account.
3. Choose **Delete** again to confirm your selection.

   The aggregator account is now deleted.

Deleting Authorization (AWS CLI)

Enter the following command:

```
aws configservice delete-aggregation-authorization --authorized-account-id
  AccountID --authorized-aws-region Region
```

If successful, the command executes with no additional output.

Viewing Aggregators for AWS Config

You can use the AWS Config console or the AWS CLI to view your aggregators.

Viewing Aggregators (Console)

To view your conformance packs in the AWS Management Console, see Aggregator Dashboard.

Viewing Aggregators (AWS CLI)

1. Enter the following command:

```
aws configservice describe-configuration-aggregators
```

2. Depending on your source account you should see output similar to the following:

For individuals accounts

```
{
    "ConfigurationAggregators": [
        {
            "ConfigurationAggregatorArn":
 "arn:aws:config:Region:AccountID:config-aggregator/config-aggregator-floqpus3",
            "CreationTime": 1517942461.442,
            "ConfigurationAggregatorName": "MyAggregator",
            "AccountAggregationSources": [
                {
                    "AllAwsRegions": true,
                    "AccountIds": [
                        "AccountID1",
                        "AccountID2",
                        "AccountID3"
                    ]
                }
            ],
            "LastUpdatedTime": 1517942461.455
        }
```

```
    ]
}
```

OR

For an organization

```
{
    "ConfigurationAggregator": {
        "ConfigurationAggregatorArn": "arn:aws:config:Region:AccountID:config-
aggregator/config-aggregator-floqpus3",
        "CreationTime": 1517942461.442,
        "ConfigurationAggregatorName": "MyAggregator",
        "OrganizationAggregationSource": {
                "AllAwsRegions": true,
                "RoleArn": "arn:aws:iam::account-of-role-to-assume:role/name-of-
role"
         },
        "LastUpdatedTime": 1517942461.442
    }
}
```

Troubleshooting for Multi-Account Multi-Region Data Aggregation for AWS Config

AWS Config might not aggregate data from source accounts for one of the following reasons:

If this happens	Do this
AWS Config is not enabled in the source account for accounts within an Organization.	Enable AWS Config in the source account and authorize the aggregator account to collect data.
Authorization is not granted to an aggregator account.	Sign in to the source account and grant authorization to the aggregator account to collect AWS Config data.
There might be a temporary issue that is preventing data aggregation.	Data aggregation is subject to delays. Wait for a few minutes.

AWS Config might not aggregate data from an organization for one of the following reasons:

If this happens	Do this
AWS Config is unable to access your organization details due to invalid IAM role.	Create an IAM role or select a valid IAM role from the IAM role list. **Note** If the IAM role is invalid for more than 7 days, AWS Config deletes data for entire organizat ion.
AWS Config service access is disabled in your organization.	You can enable integration between AWS Config and AWS Organizations through the `EnableAWS ServiceAccess` API. If you choose **Add my organization** in console, AWS Config automatically enables the integration between AWS Config and AWS Organizations.
AWS Config is unable to access your organization details because all features is not enabled in your organization.	Enable all features in AWS Organizations console.
Organizational changes such as adding an account, removing an account, enabling service access, and disabling service access are not updated in Middle East (Bahrain) and Asia Pacific (Hong Kong) regions immediately.	Organizational changes are subject to 2 hour delay. Wait for 2 hours to see all organization changes.

Querying the Current Configuration State of AWS Resources with AWS Config

Introducing a preview feature for advanced queries that allows you to use generative artificial intelligence (generative AI) capabilities to enter prompts in plain English and convert them into a ready-to-use query format. For more information, see Natural language query processor for advanced queries.

You can use AWS Config to query the current configuration state of AWS resources based on configuration properties for a single account and Region or across multiple accounts and Regions. You can perform property-based queries against current AWS resource state metadata across a list of resources that AWS Config supports. For more information on the list of supported resource types, see Supported Resource Types for Advanced Queries.

Advanced queries provides a single query endpoint and a query language to get current resource state metadata without performing service-specific describe API calls. You can use configuration aggregators to run the same queries from a central account across multiple accounts and AWS Regions.

Topics

- Features
- Query Components for AWS Config
- Query Using the SQL Query Editor for AWS Config (Console)
- Query Using the SQL Query Editor for AWS Config (AWS CLI)
- Natural language query processor for AWS Config advanced queries
- Example Queries for AWS Config
- Example Relationship Queries for AWS Config
- Limitations
- CIDR notation/IP range behavior for advanced queries
- Multiple properties within an array behavior for advanced queries
- Region Support

Features

AWS Config uses a subset of structured query language (SQL) `SELECT` syntax to perform property-based queries and aggregations on the current configuration item (CI) data. The queries range in complexity from matches against tag and/or resource identifiers, to more complex queries, such as viewing all Amazon S3 buckets that have versioning disabled. This allows you to query exactly the current resource state you need without performing AWS service-specific API calls.

It supports aggregation functions such as `AVG`, `COUNT`, `MAX`, `MIN`, and `SUM`.

You can use advanced query for:

- Inventory management; for example, to retrieve a list of Amazon EC2 instances of a particular size.
- Security and operational intelligence; for example, to retrieve a list of resources that have a specific configuration property enabled or disabled.
- Cost optimization; for example, to identify a list of Amazon EBS volumes that are not attached to any EC2 instance.
- Compliance data; for example, to retrieve a list of all your conformance packs and their compliance status.

For information about how to use the AWS SQL Query Language, see [What Is SQL (Structured Query Language)?](#).

Query Components for AWS Config

The SQL `SELECT` query components for AWS Config advanced queries are as follows.

Synopsis

```
SELECT property [, ...]
[ WHERE condition ]
[ GROUP BY property ]
[ ORDER BY property [ ASC | DESC ] [, property [ ASC | DESC ] ...] ]
```

Parameters

[WHERE condition]

Filters results according to the `condition` you specify.

Comparison operators

- = (equals)
- `IN` (list membership)
- `BETWEEN` (range check)

Logic operators

- `AND`
- `OR`
- `NOT`

[GROUP BY property]

Aggregates the result set into groups of rows with matching values for the given property.

The GROUP BY clause is applicable to aggregations.

[ORDER BY property [ASC | DESC] [, property [ASC | DESC] ...]]

Sorts a result set by one or more output `properties`.

When the clause contains multiple properties, the result set is sorted according to the first `property`, then according to the second `property` for rows that have matching values for the first property, and so on.

Examples

```
SELECT resourceId WHERE resourceType='AWS::EC2::Instance'
```

```
SELECT configuration.complianceType, COUNT(*) WHERE resourceType =
 'AWS::Config::ResourceCompliance' GROUP BY configuration.complianceType
```

Query Using the SQL Query Editor for AWS Config (Console)

Introducing a preview feature for advanced queries that allows you to use generative artificial intelligence (generative AI) capabilities to enter prompts in plain English and convert them into a ready-to-use query format. For more information, see Natural language query processor for advanced queries.

You can either use AWS sample queries or you can create your own query called as custom queries.

Considerations

Prerequisites

If you are using the one of the following AWS managed policies, you will have the necessary permissions to run and save a query: AWSServiceRoleForConfig (service-linked role) or AWS_ConfigRole.

Otherwise, you must have the permissions included in the AWSConfigUserAccess AWS managed policy.

List of properties that you can query

An updated list of properties and their data types is available in GitHub.

Advanced queries and aggregators

To run a query on an aggregator, create an aggregator. For more information, see Creating Aggregators for AWS Config.

If you already have an aggregator set up, in the query scope, choose the aggregator to run an advanced query on that aggregator. When you select an aggregator, consider adding the AWS account ID and AWS Region in the query statement to view that information in the results.

Use an AWS Sample Query

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.

2. Choose **Advanced queries** from the left navigation to query your resource configurations for a single account and Region or for multiple accounts and Regions.
3. On the **Advanced queries** page, choose an appropriate query from the list of queries. You can filter through the list of queries either by the name, description, creator, or tags. To filter for AWS queries, choose **Creator**, and enter **AWS**. The query that you select is displayed in the SQL query editor. You can edit the selected query to fit your needs.
4. To save this query to a new query, choose **Save As**.
   - In the **Query Name** field, update the name of the query.
   - In the **Description** field, update the description of the query.
   - Enter up to 50 unique tags for this query.
   - Choose **Save**.
5. Choose **Run**. The query results are displayed in the table below the query editor.
6. Choose **Export as** to export the query results in CSV or JSON format.

Create your custom query

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Advanced queries** from the left navigation to query your resource configurations for a single account and Region or for multiple accounts and Regions.
3. To create your custom query, choose **New query**.

   To view or edit a custom query, filter a query either by the name, description, creator or tags. To filter custom queries, choose **Creater** and enter **Custom**.
4. On the **Query editor** page, create your own query for this account and Region. You can also select an appropriate aggregator to create a query for multiple accounts and Regions.
5. Edit if you wish you make changes to this query. Choose **Save Query** to save this query.
   - In the **Query Name** field, update the name of the query.
   - In the **Description** field, update the description of the query.
   - Enter up to 50 unique tags for this query.
   - Choose **Save**.
6. Choose **Run**. The query results are displayed in the table below the query editor.

7. Choose **Export as** to export the query results in CSV or JSON format.

Query Using the SQL Query Editor for AWS Config (AWS CLI)

The AWS CLI is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and use scripts to automate them. For more information about the AWS CLI and for instructions on installing the AWS CLI tools, see the following in the *AWS Command Line Interface User Guide*.

- AWS Command Line Interface User Guide
- Getting Set Up with the AWS Command Line Interface

If necessary, enter `aws configure` to configure the AWS CLI to use an AWS Region where advanced queries are available.

Considerations

Prerequisites

If you are using the one of the following AWS managed policies, you will have the necessary permissions to run and save a query: AWSServiceRoleForConfig (service-linked role) or AWS_ConfigRole.

Otherwise, you must have the permissions included in the AWSConfigUserAccess AWS managed policy.

List of properties that you can query

An updated list of properties and their data types is available in GitHub.

Advanced queries and aggregators

To run a query on an aggregator, create an aggregator. For more information, see Creating Aggregators for AWS Config.

If you already have an aggregator set up, in the query scope, choose the aggregator to run an advanced query on that aggregator. When you select an aggregator, consider adding the AWS account ID and AWS Region in the query statement to view that information in the results.

Query Resource Configuration Data

To query your resource configuration data using the query editor (AWS CLI) for a single account and Region

1. Open a command prompt or a terminal window.
2. Enter the following command to query your resource configuration data.

```
aws configservice select-resource-config --expression "SELECT resourceId WHERE
 resourceType='AWS::EC2::Instance'"
```

Depending on your query, the output looks like the following.

```
{
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "resourceId"
            }
        ]
    },
    "Results": [
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}"
    ]
}
```

To query your resource configuration data using the query editor (AWS CLI) for multiple accounts and Regions

1. Open a command prompt or a terminal window.
2. Enter the following command to query your resource configuration data.

```
aws configservice select-aggregate-resource-config --expression "SELECT resourceId
 WHERE resourceType='AWS::EC2::Instance'" --configuration-aggregator-name my-
aggregator
```

Depending on your query, the output looks like the following.

```
{
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "resourceId"
            }
        ]
    },
    "Results": [
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}",
        "{\"resourceId\":\"ResourceId\"}"
    ]
}
```

> **Note**
>
> While using the `AWS::IAM::User`, `AWS::IAM::Group`, `AWS::IAM::Role`, and `AWS::IAM::Policy` resource types in an advanced query, use `awsRegion = 'global'`.

Save a Query

1. Open a command prompt or a terminal window.
2. Enter the following command to save a query.

```
aws configservice put-stored-query --stored-query "{\"QueryName\": \"cli-test\",
 \"Expression\": \"SELECT *\", \"Description\": \"cli test query\" }"
```

```
        --tags "[{ \"Key\": \"first-tag\", \"Value\": \"\" }, { \"Key\": \"second-
tag\", \"Value\": \"non-empty-tag-value\" }]"
```

3. Depending on your query, the output looks like the following.

```
{
    "QueryArn": "arn:aws:config:eu-central-1:Account ID:stored-query/cli-test/
query-e65mijt4rmam5pab"
}
```

> **Note**
>
> `--tags` is optional. When you pass the tags, the saved tags will not be returned by either `list-stored-queries` or `get-stored-query`. You must use `list-tag-for-resources` to retrieve the associated tags for a saved query.
> `--description` is optional while creating or updating a query.

View all the Saved Queries

1. Enter the following command to view the list of all saved queries.

```
aws configservice list-stored-queries
```

2. Depending on your query, the output looks like the following.

```
{
    "StoredQueryMetadata": [
        {
            "QueryId": "query-e65mijt4rmam5pab",
            "QueryArn": "arn:aws:config:eu-central-1:Account ID:stored-query/cli-
test/query-e65mijt4rmam5pab",
            "QueryName": "cli-test"
        },
        {
            "QueryId": "query-rltwlewlqfivadxq",
            "QueryArn": "arn:aws:config:eu-central-1:Account ID:stored-query/cli-
test-2/query-rltwlewlqfivadxq",
            "QueryName": "cli-test-2",
            "Description": "cli test query"
        }
```

```
    ]
}
}
```

Get Details of a Saved Query

1. Enter the following command to get details of a specific saved query.

```
aws configservice get-stored-query --query-name cli-test
```

2. Depending on your query, the output looks like the following.

```
{
    "StoredQuery": {
        "QueryId": "query-e65mijt4rmam5pab",
        "QueryArn": "arn:aws:config:eu-central-1:Account ID:stored-query/cli-test/
query-e65mijt4rmam5pab",
        "QueryName": "cli-test",
        "Description": "cli test query",
        "Expression": "SELECT *"
    }
}
```

Delete a Saved Query

- Enter the following command to delete your saved query.

```
aws configservice delete-stored-query --query-name cli-test
```

If successful, the command runs with no additional output.

Natural language query processor for AWS Config advanced queries

The natural language query processor for advanced queries is in preview release for AWS Config and is subject to change.

The natural language query processor for advanced queries uses Amazon Bedrock, a generative artificial intelligence (generative AI) technology which allows you to enter prompts in plain English and convert them into a ready-to-use query format. With the natural language query processor, you can query your AWS account or across an AWS organization.

A prompt can be a question or a statement. For example, you can enter prompts such as "Which load balancers are created after January 1, 2024?" and “List all my lambda function that is running node js 16.”

Considerations

The natural language query processor cannot do the following actions:

- Generate queries from languages other than English.
- Generate queries from prompts that do not relate to advanced queries.
- Generate queries from prompts with more than 1000 characters.
- Generate queries from follow-up corrections or from previous sessions.
- Explain code that has been generated.

Query using the natural language query processor

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Advanced queries** from the left navigation to query your resource configurations for a single account and Region or for multiple accounts and Regions.
3. On the **Advanced queries** page, choose **New query** to go to the Query editor.
   - (Optional) To run a query on an aggregator, create an aggregator. For more information, see Creating Aggregators for AWS Config.
   - If you've already set up an aggregator, in the query scope, choose the aggregator to run an advanced query on that aggregator. When you select an aggregator, consider adding the AWS account ID and AWS Region in the query statement to view that information in the results.
4. In the Query editor, go to the **Natural language query processor** section. Enter a prompt in plain English, and then choose **Generate**. For examples, see Example prompts.

5. After you generate a query, you can choose **Copy** (functionally equivalent to Ctrl+C) to copy the query to your clipboard, or choose **Populate to editor**. If populated to the editor, you can edit the generated query to fit your needs.
6. To save this query to a new query, choose **Save As**.
   - In the **Query Name** field, update the name of the query.
   - In the **Description** field, update the description of the query.
   - Enter up to 50 unique tags for this query.
   - Choose **Save**.
7. Choose **Run**. The query results display in the table below the query editor.
8. Choose **Export as** to export the query results in CSV or JSON format.

> **Note**
>
> The query results are paginated. When you export, up to 500 results are exported. You can also use the APIs to retrieve all the results. The results are paginated and you can retrieve 100 results at a time.

Example prompts

The following are prompts and the generate queries which you can use as examples.

Example: What load balancers were created after January 1, 2024?

Prompt: What load balancers were created after January 1, 2024?

Generated query:

```
SELECT
    resourceId,
    resourceType,
    resourceCreationTime
WHERE
    resourceType IN ('AWS::ElasticLoadBalancing::LoadBalancer',
 'AWS::ElasticLoadBalancingV2::LoadBalancer')
AND
    resourceCreationTime > '2024-01-01T00:00:00.0Z'
ORDER BY
```

```
    resourceCreationTime
DESC
```

Example: Which of my RDS database instances are publicly accessible?

Prompt: Which of my RDS database instances are publicly accessible?

Generated query:

```
SELECT
    resourceId,
    resourceType,
    configuration.publiclyAccessible
WHERE
    resourceType = 'AWS::RDS::DBInstance'
AND
    configuration.publiclyAccessible = true
```

Example: How many EC2 instances were created in last one year?

Prompt: How many EC2 instances were created in last one year?

Generated query:

```
SELECT
    COUNT(*)
WHERE
    resourceType = 'AWS::EC2::Instance'
AND
    resourceCreationTime
BETWEEN
    '2023-05-10T16:56:25.000Z'
AND
    '2024-05-10T16:56:25.000Z'
```

Example: How many EC2 instances do I have in each of my AWS accounts?

Prompt: How many EC2 instances do I have in each of my AWS accounts?

Generated query:

```
SELECT
    accountId,
```

```
    COUNT(*)
WHERE
    resourceType = 'AWS::EC2::Instance'
GROUP BY
    accountId'
```

Example: Which IAM roles have the managed policy AdministratorAccess attached?

Prompt: Which IAM roles have the managed policy AdministratorAccess attached?

Generated query:

```
SELECT
    resourceId,
    resourceName,
    resourceType
WHERE
    resourceType = 'AWS::IAM::Role'
AND
    configuration.attachedManagedPolicies.policyName = 'AdministratorAccess'
```

Example: EBS volumes without encryption

Prompt: EBS volumes without encryption

Generated query:

```
SELECT
    accountId
WHERE
    resourceType = 'AWS::EC2::Volume'
AND
    configuration.encrypted = false
```

Example: Get noncompliant resources

Prompt: Get noncompliant resources

Generated query:

```
SELECT
    resourceId,
    resourceType
```

```
WHERE
    resourceType = 'AWS::Config::ResourceCompliance'
AND
    configuration.complianceType = 'NON_COMPLIANT'
```

Example: List all my lambda function that is running node js 16

Prompt: List all my lambda function that is running node js 16

Generated query:

```
SELECT
    accountId,
    resourceName
WHERE
    resourceType = 'AWS::Lambda::Function'
AND
    configuration.runtime = 'nodejs16.x'
```

Example: What ACM certificates expire the next 30 days?

Prompt: What ACM certificates expire the next 30 days?

Generated query:

```
SELECT
    resourceId,
    configuration.domainName,
    configuration.notAfter
WHERE
    resourceType = 'AWS::ACM::Certificate'
AND
    configuration.notAfter
BETWEEN
    '2024-05-10 16:59:53'
AND
    '2024-06-10 16:59:53’
```

> **Note**
>
> The times in the generated query depend on the time when you enter the prompt.

Providing feedback

You can provide overall feedback about the natural language query processor or feedback about a specific generated query.

Providing feedback on the natural language query processor

Choose the **Provide feedback** button that appears above natural language query processor to the right. You can enter your satisfaction or dissatisfaction and provide feedback on how AWS Config can make the natural language query more helpful.

> **Note**
>
> Do not disclose any personal, commercially sensitive, or confidential information.

Providing feedback on a specific generated query

You can provide your feedback on a generated query by choose the thumbs up or thumbs down button that appears below the generated query.

Region Support

The natural language query processor is supported in the following Regions.

Region Name	Region	Endpoint	Protocol
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS

Example Queries for AWS Config

View the following example queries.

Query to list all EC2 instances with AMI ID ami-12345

Query:

```
SELECT
    resourceId,
    resourceType,
    configuration.instanceType,
    configuration.placement.tenancy,
    configuration.imageId,
    availabilityZone
WHERE
    resourceType = 'AWS::EC2::Instance'
AND
    configuration.imageId = 'ami-12345'
```

Results:

```
{
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "resourceId"
            },
            {
                "Name": "resourceType"
            },
            {
                "Name": "configuration.instanceType"
            },
            {
                "Name": "configuration.placement.tenancy"
            },
            {
                "Name": "configuration.imageId"
            },
            {
                "Name": "availabilityZone"
            }
        ]
    },
    "Results": [
```

```
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2c\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2a\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2c\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t1.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2a\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2c\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2c\",\"resourceType\":\"AWS::EC2::Instance\"}",
        "{\"resourceId\":\"resourceid\",\"configuration\":{\"imageId\":
\"ami-12345\",\"instanceType\":\"t2.micro\",\"placement\":{\"tenancy\":\"default
\"}},\"availabilityZone\":\"us-west-2c\",\"resourceType\":\"AWS::EC2::Instance\"}"
    ]
}
```

Query for count of resources grouped by their AWS Config rules compliance status

Query:

```
SELECT
    configuration.complianceType,
    COUNT(*)
WHERE
    resourceType = 'AWS::Config::ResourceCompliance'
GROUP BY
    configuration.complianceType
```

Results:

```
{
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "configuration.complianceType"
```

```
            },
            {
                "Name": "COUNT(*)"
            }
        ]
    },
    "Results": [
        "{\"COUNT(*)\":163,\"configuration\":{\"complianceType\":\"NON_COMPLIANT
\"}}",
        "{\"COUNT(*)\":2,\"configuration\":{\"complianceType\":\"COMPLIANT\"}}"
    ]
}
```

Query for the compliance status of AWS Conformance packs

Query:

```
SELECT
    resourceId,
    resourceName,
    resourceType,
    configuration.complianceType
WHERE
    resourceType = 'AWS::Config::ConformancePackCompliance'
```

Results:

```
{
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "resourceId"
            },
            {
                "Name": "resourceName"
            },
            {
                "Name": "resourceType"
            },
            {
                "Name": "configuration.complianceType"
            }
        ]
```

```
    },
    "Results": [
        "{\"resourceId\":\"conformance-pack-conformance-pack-ID\",\"configuration
\":{\"complianceType\":\"COMPLIANT\"},\"resourceName\":\"MyConformancePack1\",
\"resourceType\":\"AWS::Config::ConformancePackCompliance\"}",
        "{\"resourceId\":\"conformance-pack-conformance-pack-ID\",\"configuration
\":{\"complianceType\":\"NON_COMPLIANT\"},\"resourceName\":\"MyConformancePack2\",
\"resourceType\":\"AWS::Config::ConformancePackCompliance\"}",
        "{\"resourceId\":\"conformance-pack-conformance-pack-ID\",\"configuration
\":{\"complianceType\":\"NON_COMPLIANT\"},\"resourceName\":\"MyConformancePack3\",
\"resourceType\":\"AWS::Config::ConformancePackCompliance\"}"
    ]
}
```

Query to get counts of AWS resources grouped by account ID

Query:

```
aws configservice select-aggregate-resource-config --expression "SELECT COUNT(*),
 accountId group by accountId" --configuration-aggregator-name my-aggregator
```

Results:

```
{
    "Results": [
        "{\"COUNT(*)\":2407,\"accountId\":\"accountId\"}",
        "{\"COUNT(*)\":726,\"accountId\":\"accountId\"}"
    ],
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "COUNT(*)"
            },
            {
                "Name": "accountId"
            }
        ]
    }
}
```

Query to list all EC2 volumes that are not in use

Query:

```
SELECT
    resourceId,
    accountId,
    awsRegion,
    resourceType,
    configuration.volumeType,
    configuration.size,
    resourceCreationTime,
    tags,
    configuration.encrypted,
    configuration.availabilityZone,
    configuration.state.value
WHERE
    resourceType = 'AWS::EC2::Volume'
AND
    configuration.state.value = 'available'
```

Results:


```
{
    "Results": [
        "{\"accountId\":\"accountId\",\"resourceId\":\"vol-0174de9c962f6581c\",
\"awsRegion\":\"us-west-2\",\"configuration\":{\"volumeType\":\"gp2\",\"encrypted
\":false,\"size\":100.0,\"state\":{\"value\":\"available\"},\"availabilityZone\":
\"us-west-2a\"},\"resourceCreationTime\":\"2020-02-21T07:39:43.771Z\",\"tags\":[],
\"resourceType\":\"AWS::EC2::Volume\"}",
        "{\"accountId\":\"accountId\",\"resourceId\":\"vol-0cbeb652a74af2f8f\",
\"awsRegion\":\"us-east-1\",\"configuration\":{\"volumeType\":\"gp2\",\"encrypted
\":false,\"size\":100.0,\"state\":{\"value\":\"available\"},\"availabilityZone\":
\"us-east-1a\"},\"resourceCreationTime\":\"2020-02-21T07:28:40.639Z\",\"tags\":[],
\"resourceType\":\"AWS::EC2::Volume\"}"
        "{\"accountId\":\"accountId\",\"resourceId\":\"vol-0a49952d528ec8ba2\",
\"awsRegion\":\"ap-south-1\",\"configuration\":{\"volumeType\":\"gp2\",\"encrypted
\":false,\"size\":100.0,\"state\":{\"value\":\"available\"},\"availabilityZone\":
\"ap-south-1a\"},\"resourceCreationTime\":\"2020-02-21T07:39:31.800Z\",\"tags\":[],
\"resourceType\":\"AWS::EC2::Volume\"}",
    ],
    "QueryInfo": {
        "SelectFields": [
            {
                "Name": "resourceId"
            },
```

```
            {
                "Name": "accountId"
            },
            {
                "Name": "awsRegion"
            },
            {
                "Name": "resourceType"
            },
            {
                "Name": "configuration.volumeType"
            },
            {
                "Name": "configuration.size"
            },
            {
                "Name": "resourceCreationTime"
            },
            {
                "Name": "tags"
            },
            {
                "Name": "configuration.encrypted"
            },
            {
                "Name": "configuration.availabilityZone"
            },
            {
                "Name": "configuration.state.value"
            }
        ]
    }
}
```

Example Relationship Queries for AWS Config

View the following example relationship queries.

Find EIPs related to an EC2 instance

```
SELECT
    resourceId
```

```
WHERE
    resourceType = 'AWS::EC2::EIP'
    AND relationships.resourceId = 'i-abcd1234'
```

Find EIPs related to an EC2 network interface

```
SELECT
    resourceId
WHERE
    resourceType = 'AWS::EC2::EIP'
    AND relationships.resourceId = 'eni-abcd1234'
```

Find EC2 instances and network interfaces related to a security group

```
SELECT
    resourceId
WHERE
    resourceType IN ('AWS::EC2::Instance', 'AWS::EC2::NetworkInterface')
    AND relationships.resourceId = 'sg-abcd1234'
```

OR

```
SELECT
    resourceId
WHERE
    resourceType = 'AWS::EC2::Instance'
    AND relationships.resourceId = 'sg-abcd1234'

SELECT
    resourceId
WHERE
    resourceType = 'AWS::EC2::NetworkInterface'
    AND relationships.resourceId = 'sg-abcd1234'
```

Find EC2 instances, network ACLs, network interfaces and route tables related to a subnet

```
SELECT
    resourceId
WHERE
    resourceType IN ('AWS::EC2::Instance', 'AWS::EC2::NetworkACL',
 'AWS::EC2::NetworkInterface', 'AWS::EC2::RouteTable')
```

```
    AND relationships.resourceId = 'subnet-abcd1234'
```

Find EC2 instances, internet gateways, network ACLs, network interfaces, route tables, subnets and security groups related to a VPC

```
SELECT
    resourceId
WHERE
    resourceType IN ('AWS::EC2::Instance', 'AWS::EC2::InternetGateway',
 'AWS::EC2::NetworkACL', 'AWS::EC2::NetworkInterface', 'AWS::EC2::RouteTable',
 'AWS::EC2::Subnet', 'AWS::EC2::SecurityGroup')
    AND relationships.resourceId = 'vpc-abcd1234'
```

Find EC2 route tables related to a VPN gateway

```
SELECT
    resourceId
WHERE
    resourceType = 'AWS::EC2::RouteTable'
    AND relationships.resourceId = 'vgw-abcd1234'
```

Limitations

> **Note**
>
> Advanced query does not support querying resources which have not been configured to be recorded by the configuration recorder. AWS Config creates Configuration Items (CIs) with `ResourceNotRecorded` in the `configurationItemStatus` when a resource has been discovered but is not configured to be recorded by the configuration recorder. While an aggregator will aggregate these CIs, advanced query does not support querying CIs with `ResourceNotRecorded`. Update your recorder settings to enable recording of the resource types that you want to query.

As a subset of SQL `SELECT`, the query syntax has following limitations:

- No support for `ALL`, `AS`, `DISTINCT`, `FROM`, `HAVING`, `JOIN`, and `UNION` keywords in a query. `NULL` value queries are not supported.

- No support for complex `CASE` statements for creating a priority field directly in the query.
- No support for querying on third-party resources. Third-party resources retrieved using advanced queries will have the configuration field set as `NULL`.
- No support for nested structures (such as tags) to be unpacked with SQL queries.
- No support for querying deleted resources. To discover deleted resources, see Looking Up Resources That Are Discovered by AWS Config.
- The `SELECT` all columns shorthand (that is `SELECT *`) selects only the top-level, scalar properties of a CI. The scalar properties returned are `accountId`, `awsRegion`, `arn`, `availabilityZone`, `configurationItemCaptureTime`, `resourceCreationTime`, `resourceId`, `resourceName`, `resourceType`, and `version`.
- Wildcard limitations:
  - Wildcards are supported only for property values and not for property keys (for example, `...WHERE someKey LIKE 'someValue%'` is supported but `...WHERE 'someKey%' LIKE 'someValue%'` is not supported).
  - Support for only suffix wildcards (for example, `...LIKE 'AWS::EC2::%'` and `...LIKE 'AWS::EC2::_'` is supported but `...LIKE '%::EC2::Instance'` and `...LIKE '_::EC2::Instance'`is not supported).
  - Wildcard matches must be at least three characters long (for example, `...LIKE 'ab%'` and `...LIKE 'ab_'` is not allowed but `...LIKE 'abc%'` and `...LIKE 'abc_'` is allowed).

> **Note**
>
> The "_" (single underscore) is also treated as a wildcard.

- Aggregation limitations:
  - Aggregate functions can accept only a single argument or property.
  - Aggregate functions cannot take other functions as arguments.
  - `GROUP BY` with an `ORDER BY` clause referencing aggregate functions may contain only a single property.
  - For all other aggregations `GROUP BY` clauses may contain up to three properties.
  - Pagination is supported for all aggregate queries except when `ORDER BY` clause has an aggregate function. For example, `GROUP BY X, ORDER BY Y` does not work if `Y` is an aggregate function.
  - No support for `HAVING` clauses in aggregations.

- Mismatched identifier limitations:

  Mismatched identifiers are properties that have the same spelling but different cases (upper and lower case). Advanced query does not support processing queries that contain mismatched identifiers. For example:

  - Two properties that have the exact same spelling but with different casing (`configuration.dbclusterIdentifier` and `configuration.dBClusterIdentifier`).
  - Two properties where one property is a subset of the other, and they have different casing (`configuration.ipAddress` and `configuration.ipaddressPermissions`).

CIDR notation/IP range behavior for advanced queries

CIDR notation is converted to IP ranges for search.

This means that `"="` and `"BETWEEN"` search for any range that includes the provided IP, instead of for an exact one.

To search for an exact IP range, you need to add in additional conditions to exclude IPs outside of the range.

Example Searching for exact CIDR block 10.0.0.0/24

```
SELECT * WHERE resourceType = 'AWS::EC2::SecurityGroup'
  AND configuration.ipPermissions.ipRanges BETWEEN '10.0.0.0'
  AND '10.0.0.255'
  AND NOT configuration.ipPermissions.ipRanges < '10.0.0.0'
  AND NOT configuration.ipPermissions.ipRanges > '10.0.0.255'
```

Example Searching for exact IP address 192.168.0.2/32

```
SELECT * WHERE resourceType = 'AWS::EC2::SecurityGroup'
  AND configuration.ipPermissions.ipRanges = '192.168.0.2'
  AND NOT configuration.ipPermissions.ipRanges > '192.168.0.2'
  AND NOT configuration.ipPermissions.ipRanges < '192.168.0.2'
```

Multiple properties within an array behavior for advanced queries

When querying against multiple properties within an array of objects, matches are computed against *all the array elements*.

For example, for a resource R with rules A and B, the resource is compliant to rule A but noncompliant to rule B. The resource R is stored as:

```
{
    configRuleList: [
        {
            configRuleName: 'A', complianceType: 'compliant'
        },
        {
            configRuleName: 'B', complianceType: 'non_compliant'
        }
    ]
}
```

R will be returned by this query:

```
SELECT configuration WHERE configuration.configRuleList.complianceType =
 'non_compliant'
AND configuration.configRuleList.configRuleName = 'A'
```

The first condition `configuration.configRuleList.complianceType = 'non_compliant'` is applied to ALL elements in R.configRuleList, because R has a rule (rule B) with complianceType = 'non_compliant', the condition is evaluated as true.

The second condition `configuration.configRuleList.configRuleName` is applied to ALL elements in R.configRuleList, because R has a rule (rule A) with configRuleName = 'A', the condition is evaluated as true. As both conditions are true, R will be returned.

Region Support

Advanced queries is supported in the following Regions:

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	config.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	config.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	config.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	config.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	config.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	config.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hyderabad)	ap-south-2	config.ap-south-2.amazonaws.com	HTTPS	
Asia Pacific (Jakarta)	ap-southeast-3	config.ap-southeast-3.amazonaws.com	HTTPS	
Asia Pacific	ap-southeast-5	config.ap-southeast-5.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
(Malaysia)				
Asia Pacific (Melbourne)	ap-southeast-4	config.ap-southeast-4.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	config.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	config.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	config.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	config.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	config.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Thailand)	ap-southeast-7	config.ap-southeast-7.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Tokyo)	ap-northeast-1	config.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	config.ca-central-1.amazonaws.com	HTTPS	
Canada West (Calgary)	ca-west-1	config.ca-west-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	config.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	config.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	config.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	config.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	config.eu-west-3.amazonaws.com	HTTPS	
Europe (Spain)	eu-south-2	config.eu-south-2.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	config.eu-north-1.amazonaws.com	HTTPS	
Europe (Zurich)	eu-central-2	config.eu-central-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol
Israel (Tel Aviv)	il-central-1	config.il-central-1.amazonaws.com	HTTPS
Mexico (Central)	mx-central-1	config.mx-central-1.amazonaws.com	HTTPS
Middle East (Bahrain)	me-south-1	config.me-south-1.amazonaws.com	HTTPS
Middle East (UAE)	me-central-1	config.me-central-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	config.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	config.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS

Deleting AWS Config Data

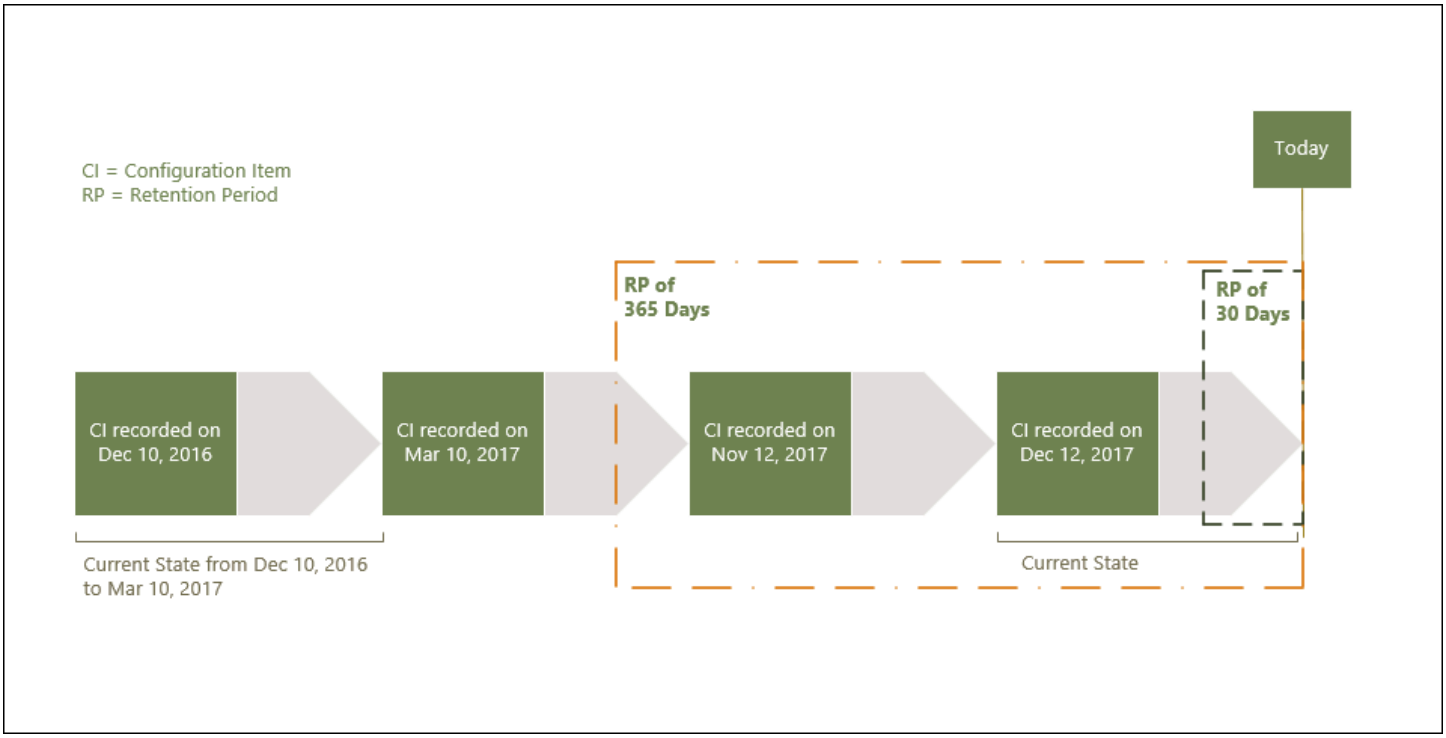
> **Note**
>
> While AWS Config uses Amazon Simple Storage Service (Amazon S3) and Amazon Simple Notification Service (Amazon SNS) for sending configuration snapshots and configuration history files, AWS Config has its own data store and retention policies. The information on this page is specific for AWS Config. Amazon S3 and Amazon SNS have their own separate data store and retention policies.

AWS Config allows you to delete your data by specifying a retention period for your `ConfigurationItems`. When you specify a retention period, AWS Config retains your `ConfigurationItems` for that specified period. You can choose a period between a minimum of 30 days and a maximum of 7 years (2557 days). AWS Config deletes data older than your specified retention period. If you do not specify a retention period, AWS Config continues to store `ConfigurationItems` for the default period of 7 years (2557 days). When recording is switched on, the current state of the resource is when a `ConfigurationItem` is recorded and until the next change (a new `ConfigurationItem`) is recorded.

To understand the behavior of retention period, let's take a look at the timeline.

- When recording is switched on, the current state of a resource always exists and can't be deleted irrespective of the date the `ConfigurationItem` is recorded.
- When AWS Config records new `ConfigurationItems`, the previous `ConfigurationItems` are deleted depending on the specified retention period.

In the following timeline, AWS Config records `ConfigurationItems` at the following dates. For the purpose of this timeline, today is represented as May 24, 2018.



The following table explains which `ConfigurationItems` are displayed on the AWS Config timeline based on selected retention period.

Retention Period	Configuration Items displayed on timeline	Explanation
30 days	December 12, 2017	The current state of the resource started from December 12, 2017 when the `ConfigurationItem` was recorded and is valid until today (May 24, 2018). When recording is turned on, the current state always exists.
365 days	December 12, 2017; November 12, 2017, and March 10, 2017	The retention period shows the current state December 12, 2017 and previous `ConfigurationItems` November 12, 2017 and March 10, 2017.

Retention Period	Configuration Items displayed on timeline	Explanation
		The `ConfigurationItem` for March 10, 2017 is displayed on the timeline because that configuration state represented the current state 365 days ago.

After you specify a retention period, AWS Config APIs no longer return `ConfigurationItems` that represent a state older than the specified retention period.

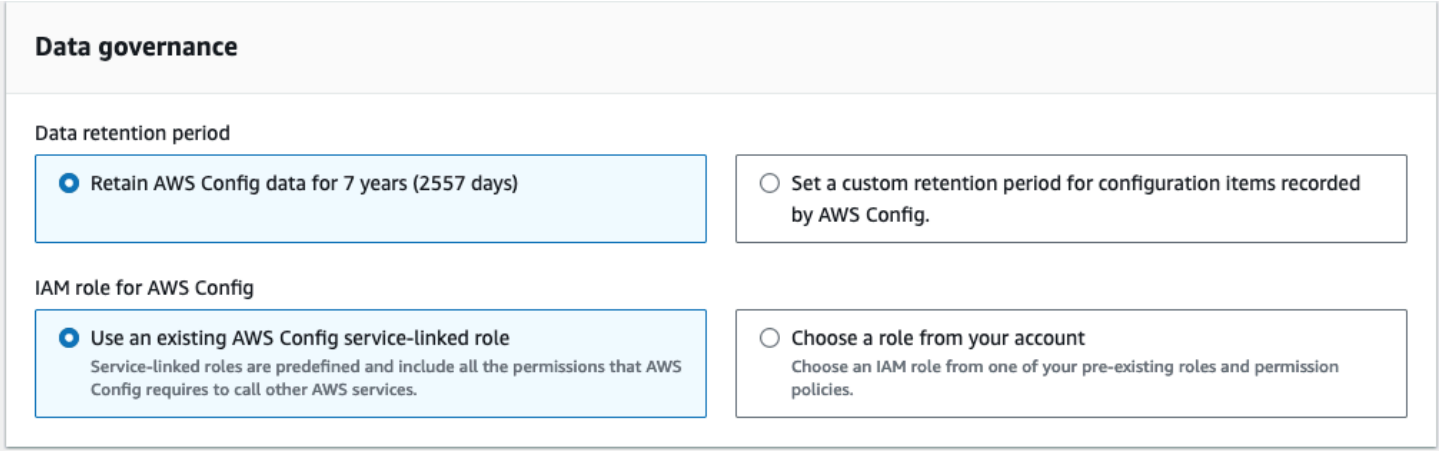
> **Note**
>
> - AWS Config cannot record your `ConfigurationItems` if recording is switched off.
> - AWS Config cannot record your `ConfigurationItems` if your IAM role has insufficient permissions. For more information, see Permissions for the IAM Role Assigned to AWS Config.

Setting Data Retention Period in AWS Management Console

In the AWS Management Console, if you do not select a data retention period, the default period is 7 years or 2557 days.

To set a custom data retention period for configuration items select the checkbox. You can select 1 year, 3 years, 5 years, or a custom period. For a custom period, enter the number of days between 30 and 2557 days.

The following image displays where you can set the data retention period in **Data Governance**. You can access **Data Governance** on the **Edit Settings** page from the AWS Config console by choosing **Settings** in the left navigation bar, and then choosing **Edit**.


Data governance
Data retention period
Retain AWS Config data for 7 years (2557 days)
Set a custom retention period for configuration items recorded by AWS Config.
IAM role for AWS Config
Use an existing AWS Config service-linked role
Service-linked roles are predefined and include all the permissions that AWS Config requires to call other AWS services.
Choose a role from your account
Choose an IAM role from one of your pre-existing roles and permission policies.

Security in AWS Config

Cloud security at AWS is the highest priority. As an AWS customer, you benefit from data centers and network architectures that are built to meet the requirements of the most security-sensitive organizations.

Security is a shared responsibility between AWS and you. The shared responsibility model describes this as security *of* the cloud and security *in* the cloud:

- **Security of the cloud** – AWS is responsible for protecting the infrastructure that runs AWS services in the AWS Cloud. AWS also provides you with services that you can use securely. Third-party auditors regularly test and verify the effectiveness of our security as part of the AWS Compliance Programs. To learn about the compliance programs that apply to AWS Config, see AWS services in Scope by Compliance Program.
- **Security in the cloud** – Your responsibility is determined by the AWS service that you use. You are also responsible for other factors including the sensitivity of your data, your company's requirements, and applicable laws and regulations.

This documentation helps you understand how to apply the shared responsibility model when using AWS Config. The following topics show you how to configure AWS Config to meet your security and compliance objectives.

Topics

- Data Protection in AWS Config
- Identity and Access Management for AWS Config
- Incident Response in AWS Config
- Compliance Validation for AWS Config
- Resilience in AWS Config
- Infrastructure Security in AWS Config
- Cross-service confused deputy prevention
- Security Best Practices for AWS Config

Data Protection in AWS Config

The AWS shared responsibility model applies to data protection in AWS Config. As described in this model, AWS is responsible for protecting the global infrastructure that runs all of the AWS Cloud. You are responsible for maintaining control over your content that is hosted on this infrastructure. You are also responsible for the security configuration and management tasks for the AWS services that you use. For more information about data privacy, see the Data Privacy FAQ. For information about data protection in Europe, see the AWS Shared Responsibility Model and GDPR blog post on the *AWS Security Blog*.

For data protection purposes, we recommend that you protect AWS account credentials and set up individual users with AWS IAM Identity Center or AWS Identity and Access Management (IAM). That way, each user is given only the permissions necessary to fulfill their job duties. We also recommend that you secure your data in the following ways:

- Use multi-factor authentication (MFA) with each account.
- Use SSL/TLS to communicate with AWS resources. We require TLS 1.2 and recommend TLS 1.3.
- Set up API and user activity logging with AWS CloudTrail. For information about using CloudTrail trails to capture AWS activities, see Working with CloudTrail trails in the *AWS CloudTrail User Guide*.
- Use AWS encryption solutions, along with all default security controls within AWS services.
- Use advanced managed security services such as Amazon Macie, which assists in discovering and securing sensitive data that is stored in Amazon S3.
- If you require FIPS 140-3 validated cryptographic modules when accessing AWS through a command line interface or an API, use a FIPS endpoint. For more information about the available FIPS endpoints, see Federal Information Processing Standard (FIPS) 140-3.

We strongly recommend that you never put confidential or sensitive information, such as your customers' email addresses, into tags or free-form text fields such as a **Name** field. This includes when you work with AWS Config or other AWS services using the console, API, AWS CLI, or AWS SDKs. Any data that you enter into tags or free-form text fields used for names may be used for billing or diagnostic logs. If you provide a URL to an external server, we strongly recommend that you do not include credentials information in the URL to validate your request to that server.

Encryption of Data at Rest

Data is encrypted at rest using transparent server-side encryption. This helps reduce the operational burden and complexity involved in protecting sensitive data. With encryption at rest, you can build security-sensitive applications that meet encryption compliance and regulatory requirements.

Encryption of Data in Transit

Data gathered and accessed by AWS Config is exclusively over a Transport Layer Security (TLS) protected channel.

Identity and Access Management for AWS Config

AWS Identity and Access Management (IAM) is an AWS service that helps an administrator securely control access to AWS resources. IAM administrators control who can be *authenticated* (signed in) and *authorized* (have permissions) to use AWS Config resources. IAM is an AWS service that you can use with no additional charge.

Topics

- Audience
- Authenticating with identities
- Managing access using policies
- How AWS Config works with IAM
- Identity-based policy examples for AWS Config
- AWS managed policies for AWS Config
- Permissions for the IAM Role Assigned to AWS Config
- Updating the IAM Role for the customer managed configuration recorder
- Permissions for the Amazon S3 Bucket for the AWS Config Delivery Channel
- Permissions for the KMS Key for the AWS Config Delivery Channel
- Permissions for the Amazon SNS Topic
- Troubleshooting AWS Config identity and access
- Using Service-Linked Roles for AWS Config

Audience

How you use AWS Identity and Access Management (IAM) differs, depending on the work that you do in AWS Config.

Service user – If you use the AWS Config service to do your job, then your administrator provides you with the credentials and permissions that you need. As you use more AWS Config features to do your work, you might need additional permissions. Understanding how access is managed can help you request the right permissions from your administrator. If you cannot access a feature in AWS Config, see Troubleshooting AWS Config identity and access.

Service administrator – If you're in charge of AWS Config resources at your company, you probably have full access to AWS Config. It's your job to determine which AWS Config features and resources your service users should access. You must then submit requests to your IAM administrator to change the permissions of your service users. Review the information on this page to understand the basic concepts of IAM. To learn more about how your company can use IAM with AWS Config, see How AWS Config works with IAM.

IAM administrator – If you're an IAM administrator, you might want to learn details about how you can write policies to manage access to AWS Config. To view example AWS Config identity-based policies that you can use in IAM, see Identity-based policy examples for AWS Config.

Authenticating with identities

Authentication is how you sign in to AWS using your identity credentials. You must be *authenticated* (signed in to AWS) as the AWS account root user, as an IAM user, or by assuming an IAM role.

You can sign in to AWS as a federated identity by using credentials provided through an identity source. AWS IAM Identity Center (IAM Identity Center) users, your company's single sign-on authentication, and your Google or Facebook credentials are examples of federated identities. When you sign in as a federated identity, your administrator previously set up identity federation using IAM roles. When you access AWS by using federation, you are indirectly assuming a role.

Depending on the type of user you are, you can sign in to the AWS Management Console or the AWS access portal. For more information about signing in to AWS, see How to sign in to your AWS account in the *AWS Sign-In User Guide*.

If you access AWS programmatically, AWS provides a software development kit (SDK) and a command line interface (CLI) to cryptographically sign your requests by using your credentials. If

you don't use AWS tools, you must sign requests yourself. For more information about using the recommended method to sign requests yourself, see AWS Signature Version 4 for API requests in the *IAM User Guide*.

Regardless of the authentication method that you use, you might be required to provide additional security information. For example, AWS recommends that you use multi-factor authentication (MFA) to increase the security of your account. To learn more, see Multi-factor authentication in the *AWS IAM Identity Center User Guide* and AWS Multi-factor authentication in IAM in the *IAM User Guide*.

AWS account root user

When you create an AWS account, you begin with one sign-in identity that has complete access to all AWS services and resources in the account. This identity is called the AWS account *root user* and is accessed by signing in with the email address and password that you used to create the account. We strongly recommend that you don't use the root user for your everyday tasks. Safeguard your root user credentials and use them to perform the tasks that only the root user can perform. For the complete list of tasks that require you to sign in as the root user, see Tasks that require root user credentials in the *IAM User Guide*.

Federated identity

As a best practice, require human users, including users that require administrator access, to use federation with an identity provider to access AWS services by using temporary credentials.

A *federated identity* is a user from your enterprise user directory, a web identity provider, the AWS Directory Service, the Identity Center directory, or any user that accesses AWS services by using credentials provided through an identity source. When federated identities access AWS accounts, they assume roles, and the roles provide temporary credentials.

For centralized access management, we recommend that you use AWS IAM Identity Center. You can create users and groups in IAM Identity Center, or you can connect and synchronize to a set of users and groups in your own identity source for use across all your AWS accounts and applications. For information about IAM Identity Center, see What is IAM Identity Center? in the *AWS IAM Identity Center User Guide*.

IAM users and groups

An *IAM user* is an identity within your AWS account that has specific permissions for a single person or application. Where possible, we recommend relying on temporary credentials instead of creating

IAM users who have long-term credentials such as passwords and access keys. However, if you have specific use cases that require long-term credentials with IAM users, we recommend that you rotate access keys. For more information, see Rotate access keys regularly for use cases that require long-term credentials in the *IAM User Guide*.

An *IAM group* is an identity that specifies a collection of IAM users. You can't sign in as a group. You can use groups to specify permissions for multiple users at a time. Groups make permissions easier to manage for large sets of users. For example, you could have a group named *IAMAdmins* and give that group permissions to administer IAM resources.

Users are different from roles. A user is uniquely associated with one person or application, but a role is intended to be assumable by anyone who needs it. Users have permanent long-term credentials, but roles provide temporary credentials. To learn more, see Use cases for IAM users in the *IAM User Guide*.

IAM roles

An *IAM role* is an identity within your AWS account that has specific permissions. It is similar to an IAM user, but is not associated with a specific person. To temporarily assume an IAM role in the AWS Management Console, you can switch from a user to an IAM role (console). You can assume a role by calling an AWS CLI or AWS API operation or by using a custom URL. For more information about methods for using roles, see Methods to assume a role in the *IAM User Guide*.

IAM roles with temporary credentials are useful in the following situations:

- **Federated user access** – To assign permissions to a federated identity, you create a role and define permissions for the role. When a federated identity authenticates, the identity is associated with the role and is granted the permissions that are defined by the role. For information about roles for federation, see Create a role for a third-party identity provider (federation) in the *IAM User Guide*. If you use IAM Identity Center, you configure a permission set. To control what your identities can access after they authenticate, IAM Identity Center correlates the permission set to a role in IAM. For information about permissions sets, see Permission sets in the *AWS IAM Identity Center User Guide*.
- **Temporary IAM user permissions** – An IAM user or role can assume an IAM role to temporarily take on different permissions for a specific task.
- **Cross-account access** – You can use an IAM role to allow someone (a trusted principal) in a different account to access resources in your account. Roles are the primary way to grant cross-account access. However, with some AWS services, you can attach a policy directly to a resource

(instead of using a role as a proxy). To learn the difference between roles and resource-based policies for cross-account access, see Cross account resource access in IAM in the *IAM User Guide*.

- **Cross-service access** – Some AWS services use features in other AWS services. For example, when you make a call in a service, it's common for that service to run applications in Amazon EC2 or store objects in Amazon S3. A service might do this using the calling principal's permissions, using a service role, or using a service-linked role.
  - **Forward access sessions (FAS)** – When you use an IAM user or role to perform actions in AWS, you are considered a principal. When you use some services, you might perform an action that then initiates another action in a different service. FAS uses the permissions of the principal calling an AWS service, combined with the requesting AWS service to make requests to downstream services. FAS requests are only made when a service receives a request that requires interactions with other AWS services or resources to complete. In this case, you must have permissions to perform both actions. For policy details when making FAS requests, see Forward access sessions.
  - **Service role** – A service role is an IAM role that a service assumes to perform actions on your behalf. An IAM administrator can create, modify, and delete a service role from within IAM. For more information, see Create a role to delegate permissions to an AWS service in the *IAM User Guide*.
  - **Service-linked role** – A service-linked role is a type of service role that is linked to an AWS service. The service can assume the role to perform an action on your behalf. Service-linked roles appear in your AWS account and are owned by the service. An IAM administrator can view, but not edit the permissions for service-linked roles.
- **Applications running on Amazon EC2** – You can use an IAM role to manage temporary credentials for applications that are running on an EC2 instance and making AWS CLI or AWS API requests. This is preferable to storing access keys within the EC2 instance. To assign an AWS role to an EC2 instance and make it available to all of its applications, you create an instance profile that is attached to the instance. An instance profile contains the role and enables programs that are running on the EC2 instance to get temporary credentials. For more information, see Use an IAM role to grant permissions to applications running on Amazon EC2 instances in the *IAM User Guide*.

Managing access using policies

You control access in AWS by creating policies and attaching them to AWS identities or resources. A policy is an object in AWS that, when associated with an identity or resource, defines their

permissions. AWS evaluates these policies when a principal (user, root user, or role session) makes a request. Permissions in the policies determine whether the request is allowed or denied. Most policies are stored in AWS as JSON documents. For more information about the structure and contents of JSON policy documents, see Overview of JSON policies in the *IAM User Guide*.

Administrators can use AWS JSON policies to specify who has access to what. That is, which **principal** can perform **actions** on what **resources**, and under what **conditions**.

By default, users and roles have no permissions. To grant users permission to perform actions on the resources that they need, an IAM administrator can create IAM policies. The administrator can then add the IAM policies to roles, and users can assume the roles.

IAM policies define permissions for an action regardless of the method that you use to perform the operation. For example, suppose that you have a policy that allows the `iam:GetRole` action. A user with that policy can get role information from the AWS Management Console, the AWS CLI, or the AWS API.

Identity-based policies

Identity-based policies are JSON permissions policy documents that you can attach to an identity, such as an IAM user, group of users, or role. These policies control what actions users and roles can perform, on which resources, and under what conditions. To learn how to create an identity-based policy, see Define custom IAM permissions with customer managed policies in the *IAM User Guide*.

Identity-based policies can be further categorized as *inline policies* or *managed policies*. Inline policies are embedded directly into a single user, group, or role. Managed policies are standalone policies that you can attach to multiple users, groups, and roles in your AWS account. Managed policies include AWS managed policies and customer managed policies. To learn how to choose between a managed policy or an inline policy, see Choose between managed policies and inline policies in the *IAM User Guide*.

Resource-based policies

Resource-based policies are JSON policy documents that you attach to a resource. Examples of resource-based policies are IAM *role trust policies* and Amazon S3 *bucket policies*. In services that support resource-based policies, service administrators can use them to control access to a specific resource. For the resource where the policy is attached, the policy defines what actions a specified principal can perform on that resource and under what conditions. You must specify a principal in a resource-based policy. Principals can include accounts, users, roles, federated users, or AWS services.

Resource-based policies are inline policies that are located in that service. You can't use AWS managed policies from IAM in a resource-based policy.

Access control lists (ACLs)

Access control lists (ACLs) control which principals (account members, users, or roles) have permissions to access a resource. ACLs are similar to resource-based policies, although they do not use the JSON policy document format.

Amazon S3, AWS WAF, and Amazon VPC are examples of services that support ACLs. To learn more about ACLs, see Access control list (ACL) overview in the *Amazon Simple Storage Service Developer Guide*.

Other policy types

AWS supports additional, less-common policy types. These policy types can set the maximum permissions granted to you by the more common policy types.

- **Permissions boundaries** – A permissions boundary is an advanced feature in which you set the maximum permissions that an identity-based policy can grant to an IAM entity (IAM user or role). You can set a permissions boundary for an entity. The resulting permissions are the intersection of an entity's identity-based policies and its permissions boundaries. Resource-based policies that specify the user or role in the `Principal` field are not limited by the permissions boundary. An explicit deny in any of these policies overrides the allow. For more information about permissions boundaries, see Permissions boundaries for IAM entities in the *IAM User Guide*.
- **Service control policies (SCPs)** – SCPs are JSON policies that specify the maximum permissions for an organization or organizational unit (OU) in AWS Organizations. AWS Organizations is a service for grouping and centrally managing multiple AWS accounts that your business owns. If you enable all features in an organization, then you can apply service control policies (SCPs) to any or all of your accounts. The SCP limits permissions for entities in member accounts, including each AWS account root user. For more information about Organizations and SCPs, see Service control policies in the *AWS Organizations User Guide*.
- **Resource control policies (RCPs)** – RCPs are JSON policies that you can use to set the maximum available permissions for resources in your accounts without updating the IAM policies attached to each resource that you own. The RCP limits permissions for resources in member accounts and can impact the effective permissions for identities, including the AWS account root user, regardless of whether they belong to your organization. For more information about

Organizations and RCPs, including a list of AWS services that support RCPs, see Resource control policies (RCPs) in the *AWS Organizations User Guide*.

- **Session policies** – Session policies are advanced policies that you pass as a parameter when you programmatically create a temporary session for a role or federated user. The resulting session's permissions are the intersection of the user or role's identity-based policies and the session policies. Permissions can also come from a resource-based policy. An explicit deny in any of these policies overrides the allow. For more information, see Session policies in the *IAM User Guide*.

Multiple policy types

When multiple types of policies apply to a request, the resulting permissions are more complicated to understand. To learn how AWS determines whether to allow a request when multiple policy types are involved, see Policy evaluation logic in the *IAM User Guide*.

How AWS Config works with IAM

Before you use IAM to manage access to AWS Config, learn what IAM features are available to use with AWS Config.

IAM features you can use with AWS Config

IAM feature	AWS Config support
Identity-based policies	Yes
Resource-based policies	No
Policy actions	Yes
Policy resources	Yes
Policy condition keys (service-specific)	Yes
ACLs	No
ABAC (tags in policies)	Yes
Temporary credentials	Yes

IAM feature	AWS Config support
Forward access sessions (FAS)	Yes
Service roles	Yes
Service-linked roles	Yes

To get a high-level view of how AWS Config and other AWS services work with most IAM features, see AWS services that work with IAM in the *IAM User Guide*.

Identity-based policies for AWS Config

Supports identity-based policies: Yes

Identity-based policies are JSON permissions policy documents that you can attach to an identity, such as an IAM user, group of users, or role. These policies control what actions users and roles can perform, on which resources, and under what conditions. To learn how to create an identity-based policy, see Define custom IAM permissions with customer managed policies in the *IAM User Guide*.

With IAM identity-based policies, you can specify allowed or denied actions and resources as well as the conditions under which actions are allowed or denied. You can't specify the principal in an identity-based policy because it applies to the user or role to which it is attached. To learn about all of the elements that you can use in a JSON policy, see IAM JSON policy elements reference in the *IAM User Guide*.

Identity-based policy examples for AWS Config

To view examples of AWS Config identity-based policies, see Identity-based policy examples for AWS Config.

Resource-based policies within AWS Config

Supports resource-based policies: No

Resource-based policies are JSON policy documents that you attach to a resource. Examples of resource-based policies are IAM *role trust policies* and Amazon S3 *bucket policies*. In services that support resource-based policies, service administrators can use them to control access to a specific resource. For the resource where the policy is attached, the policy defines what actions a specified

principal can perform on that resource and under what conditions. You must specify a principal in a resource-based policy. Principals can include accounts, users, roles, federated users, or AWS services.

To enable cross-account access, you can specify an entire account or IAM entities in another account as the principal in a resource-based policy. Adding a cross-account principal to a resource-based policy is only half of establishing the trust relationship. When the principal and the resource are in different AWS accounts, an IAM administrator in the trusted account must also grant the principal entity (user or role) permission to access the resource. They grant permission by attaching an identity-based policy to the entity. However, if a resource-based policy grants access to a principal in the same account, no additional identity-based policy is required. For more information, see Cross account resource access in IAM in the *IAM User Guide*.

Policy actions for AWS Config

Supports policy actions: Yes

Administrators can use AWS JSON policies to specify who has access to what. That is, which **principal** can perform **actions** on what **resources**, and under what **conditions**.

The `Action` element of a JSON policy describes the actions that you can use to allow or deny access in a policy. Policy actions usually have the same name as the associated AWS API operation. There are some exceptions, such as *permission-only actions* that don't have a matching API operation. There are also some operations that require multiple actions in a policy. These additional actions are called *dependent actions*.

Include actions in a policy to grant permissions to perform the associated operation.

To see a list of AWS Config actions, see Actions defined by AWS Config in the *Service Authorization Reference*.

Policy actions in AWS Config use the following prefix before the action:

```
config
```

To specify multiple actions in a single statement, separate them with commas.

```
"Action": [
      "config:action1",
      "config:action2"
```

```
        ]
```

You can specify multiple actions using wildcards (*). For example, to specify all actions that begin with the word `Describe`, include the following action:

```
"Action": "config:Describe*"
```

To view examples of AWS Config identity-based policies, see Identity-based policy examples for AWS Config.

Policy resources for AWS Config

Supports policy resources: Yes

Administrators can use AWS JSON policies to specify who has access to what. That is, which **principal** can perform **actions** on what **resources**, and under what **conditions**.

The `Resource` JSON policy element specifies the object or objects to which the action applies. Statements must include either a `Resource` or a `NotResource` element. As a best practice, specify a resource using its Amazon Resource Name (ARN). You can do this for actions that support a specific resource type, known as *resource-level permissions*.

For actions that don't support resource-level permissions, such as listing operations, use a wildcard (*) to indicate that the statement applies to all resources.

```
"Resource": "*"
```

To see a list of AWS Config resource types and their ARNs, see Resources defined by AWS Config in the *Service Authorization Reference*. To learn with which actions you can specify the ARN of each resource, see Actions defined by AWS Config.

To view examples of AWS Config identity-based policies, see Identity-based policy examples for AWS Config.

Policy condition keys for AWS Config

Supports service-specific policy condition keys: Yes

Administrators can use AWS JSON policies to specify who has access to what. That is, which **principal** can perform **actions** on what **resources**, and under what **conditions**.

The `Condition` element (or `Condition` *block*) lets you specify conditions in which a statement is in effect. The `Condition` element is optional. You can create conditional expressions that use condition operators, such as equals or less than, to match the condition in the policy with values in the request.

If you specify multiple `Condition` elements in a statement, or multiple keys in a single `Condition` element, AWS evaluates them using a logical `AND` operation. If you specify multiple values for a single condition key, AWS evaluates the condition using a logical `OR` operation. All of the conditions must be met before the statement's permissions are granted.

You can also use placeholder variables when you specify conditions. For example, you can grant an IAM user permission to access a resource only if it is tagged with their IAM user name. For more information, see IAM policy elements: variables and tags in the *IAM User Guide*.

AWS supports global condition keys and service-specific condition keys. To see all AWS global condition keys, see AWS global condition context keys in the *IAM User Guide*.

To see a list of AWS Config condition keys, see Condition keys for AWS Config in the *Service Authorization Reference*. To learn with which actions and resources you can use a condition key, see Actions defined by AWS Config.

To view examples of AWS Config identity-based policies, see Identity-based policy examples for AWS Config.

ACLs in AWS Config

Supports ACLs: No

Access control lists (ACLs) control which principals (account members, users, or roles) have permissions to access a resource. ACLs are similar to resource-based policies, although they do not use the JSON policy document format.

ABAC with AWS Config

Supports ABAC (tags in policies): Yes

Attribute-based access control (ABAC) is an authorization strategy that defines permissions based on attributes. In AWS, these attributes are called *tags*. You can attach tags to IAM entities (users or

roles) and to many AWS resources. Tagging entities and resources is the first step of ABAC. Then you design ABAC policies to allow operations when the principal's tag matches the tag on the resource that they are trying to access.

ABAC is helpful in environments that are growing rapidly and helps with situations where policy management becomes cumbersome.

To control access based on tags, you provide tag information in the condition element of a policy using the `aws:ResourceTag/key-name`, `aws:RequestTag/key-name`, or `aws:TagKeys` condition keys.

If a service supports all three condition keys for every resource type, then the value is **Yes** for the service. If a service supports all three condition keys for only some resource types, then the value is **Partial**.

For more information about ABAC, see Define permissions with ABAC authorization in the *IAM User Guide*. To view a tutorial with steps for setting up ABAC, see Use attribute-based access control (ABAC) in the *IAM User Guide*.

For more information about tagging AWS Config resources, see Tagging Your AWS Config Resources.

Using temporary credentials with AWS Config

Supports temporary credentials: Yes

Some AWS services don't work when you sign in using temporary credentials. For additional information, including which AWS services work with temporary credentials, see AWS services that work with IAM in the *IAM User Guide*.

You are using temporary credentials if you sign in to the AWS Management Console using any method except a user name and password. For example, when you access AWS using your company's single sign-on (SSO) link, that process automatically creates temporary credentials. You also automatically create temporary credentials when you sign in to the console as a user and then switch roles. For more information about switching roles, see Switch from a user to an IAM role (console) in the *IAM User Guide*.

You can manually create temporary credentials using the AWS CLI or AWS API. You can then use those temporary credentials to access AWS. AWS recommends that you dynamically generate temporary credentials instead of using long-term access keys. For more information, see Temporary security credentials in IAM.

Forward access sessions for AWS Config

Supports forward access sessions (FAS): Yes

When you use an IAM user or role to perform actions in AWS, you are considered a principal. When you use some services, you might perform an action that then initiates another action in a different service. FAS uses the permissions of the principal calling an AWS service, combined with the requesting AWS service to make requests to downstream services. FAS requests are only made when a service receives a request that requires interactions with other AWS services or resources to complete. In this case, you must have permissions to perform both actions. For policy details when making FAS requests, see Forward access sessions.

Service roles for AWS Config

Supports service roles: Yes

A service role is an IAM role that a service assumes to perform actions on your behalf. An IAM administrator can create, modify, and delete a service role from within IAM. For more information, see Create a role to delegate permissions to an AWS service in the *IAM User Guide*.

> **Warning**
>
> Changing the permissions for a service role might break AWS Config functionality. Edit service roles only when AWS Config provides guidance to do so.

Service-linked roles for AWS Config

Supports service-linked roles: Yes

A service-linked role is a type of service role that is linked to an AWS service. The service can assume the role to perform an action on your behalf. Service-linked roles appear in your AWS account and are owned by the service. An IAM administrator can view, but not edit the permissions for service-linked roles.

For details about creating or managing AWS Config service-linked roles, see Using Service-Linked Roles for AWS Config.

For details about creating or managing service-linked roles, see AWS services that work with IAM. Find a service in the table that includes a `Yes` in the **Service-linked role** column. Choose the **Yes** link to view the service-linked role documentation for that service.

Identity-based policy examples for AWS Config

By default, users and roles don't have permission to create or modify AWS Config resources. They also can't perform tasks by using the AWS Management Console, AWS Command Line Interface (AWS CLI), or AWS API. To grant users permission to perform actions on the resources that they need, an IAM administrator can create IAM policies. The administrator can then add the IAM policies to roles, and users can assume the roles.

To learn how to create an IAM identity-based policy by using these example JSON policy documents, see Create IAM policies (console) in the *IAM User Guide*.

For details about actions and resource types defined by AWS Config, including the format of the ARNs for each of the resource types, see Actions, resources, and condition keys for AWS Config in the *Service Authorization Reference*.

Topics

- Policy best practices
- Sign up for an AWS account
- Create a user with administrative access
- Using the AWS Config console
- Allow users to view their own permissions
- Read-only access to AWS Config
- Full access to AWS Config
- Supported Resource-Level Permissions for AWS Config Rule API Actions
- Supported Resource-Level Permissions for Multi-Account Multi-Region Data Aggregation

Policy best practices

Identity-based policies determine whether someone can create, access, or delete AWS Config resources in your account. These actions can incur costs for your AWS account. When you create or edit identity-based policies, follow these guidelines and recommendations:

- **Get started with AWS managed policies and move toward least-privilege permissions** – To get started granting permissions to your users and workloads, use the *AWS managed policies* that grant permissions for many common use cases. They are available in your AWS account. We recommend that you reduce permissions further by defining AWS customer managed policies

that are specific to your use cases. For more information, see AWS managed policies or AWS managed policies for job functions in the *IAM User Guide*.

- **Apply least-privilege permissions** – When you set permissions with IAM policies, grant only the permissions required to perform a task. You do this by defining the actions that can be taken on specific resources under specific conditions, also known as *least-privilege permissions*. For more information about using IAM to apply permissions, see Policies and permissions in IAM in the *IAM User Guide*.
- **Use conditions in IAM policies to further restrict access** – You can add a condition to your policies to limit access to actions and resources. For example, you can write a policy condition to specify that all requests must be sent using SSL. You can also use conditions to grant access to service actions if they are used through a specific AWS service, such as AWS CloudFormation. For more information, see IAM JSON policy elements: Condition in the *IAM User Guide*.
- **Use IAM Access Analyzer to validate your IAM policies to ensure secure and functional permissions** – IAM Access Analyzer validates new and existing policies so that the policies adhere to the IAM policy language (JSON) and IAM best practices. IAM Access Analyzer provides more than 100 policy checks and actionable recommendations to help you author secure and functional policies. For more information, see Validate policies with IAM Access Analyzer in the *IAM User Guide*.
- **Require multi-factor authentication (MFA)** – If you have a scenario that requires IAM users or a root user in your AWS account, turn on MFA for additional security. To require MFA when API operations are called, add MFA conditions to your policies. For more information, see Secure API access with MFA in the *IAM User Guide*.

For more information about best practices in IAM, see Security best practices in IAM in the *IAM User Guide*.

Sign up for an AWS account

If you do not have an AWS account, complete the following steps to create one.

To sign up for an AWS account

1. Open https://portal.aws.amazon.com/billing/signup.
2. Follow the online instructions.

   Part of the sign-up procedure involves receiving a phone call and entering a verification code on the phone keypad.

When you sign up for an AWS account, an *AWS account root user* is created. The root user has access to all AWS services and resources in the account. As a security best practice, assign administrative access to a user, and use only the root user to perform tasks that require root user access.

AWS sends you a confirmation email after the sign-up process is complete. At any time, you can view your current account activity and manage your account by going to https://aws.amazon.com/ and choosing **My Account**.

Create a user with administrative access

After you sign up for an AWS account, secure your AWS account root user, enable AWS IAM Identity Center, and create an administrative user so that you don't use the root user for everyday tasks.

Secure your AWS account root user

1. Sign in to the AWS Management Console as the account owner by choosing **Root user** and entering your AWS account email address. On the next page, enter your password.

   For help signing in by using root user, see Signing in as the root user in the *AWS Sign-In User Guide*.

2. Turn on multi-factor authentication (MFA) for your root user.

   For instructions, see Enable a virtual MFA device for your AWS account root user (console) in the *IAM User Guide*.

Create a user with administrative access

1. Enable IAM Identity Center.

   For instructions, see Enabling AWS IAM Identity Center in the *AWS IAM Identity Center User Guide*.

2. In IAM Identity Center, grant administrative access to a user.

   For a tutorial about using the IAM Identity Center directory as your identity source, see Configure user access with the default IAM Identity Center directory in the *AWS IAM Identity Center User Guide*.

Sign in as the user with administrative access

- To sign in with your IAM Identity Center user, use the sign-in URL that was sent to your email address when you created the IAM Identity Center user.

  For help signing in using an IAM Identity Center user, see Signing in to the AWS access portal in the *AWS Sign-In User Guide*.

Assign access to additional users

1. In IAM Identity Center, create a permission set that follows the best practice of applying least-privilege permissions.

   For instructions, see Create a permission set in the *AWS IAM Identity Center User Guide*.
2. Assign users to a group, and then assign single sign-on access to the group.

   For instructions, see Add groups in the *AWS IAM Identity Center User Guide*.

Using the AWS Config console

To access the AWS Config console, you must have a minimum set of permissions. These permissions must allow you to list and view details about the AWS Config resources in your AWS account. If you create an identity-based policy that is more restrictive than the minimum required permissions, the console won't function as intended for entities (users or roles) with that policy.

You don't need to allow minimum console permissions for users that are making calls only to the AWS CLI or the AWS API. Instead, allow access to only the actions that match the API operation that they're trying to perform.

To ensure that users and roles can still use the AWS Config console, also attach the AWS Config `AWSConfigUserAccess` AWS managed policy to the entities. For more information, see Adding permissions to a user in the *IAM User Guide*.

You must give users permissions to interact with AWS Config. For users who need full access to AWS Config, use the Full access to AWS Config managed policy.

To provide access, add permissions to your users, groups, or roles:

- Users and groups in AWS IAM Identity Center:

Create a permission set. Follow the instructions in Create a permission set in the *AWS IAM Identity Center User Guide*.

- Users managed in IAM through an identity provider:

  Create a role for identity federation. Follow the instructions in Create a role for a third-party identity provider (federation) in the *IAM User Guide*.

- IAM users:
  - Create a role that your user can assume. Follow the instructions in Create a role for an IAM user in the *IAM User Guide*.
  - (Not recommended) Attach a policy directly to a user or add a user to a user group. Follow the instructions in Adding permissions to a user (console) in the *IAM User Guide*.

Allow users to view their own permissions

This example shows how you might create a policy that allows IAM users to view the inline and managed policies that are attached to their user identity. This policy includes permissions to complete this action on the console or programmatically using the AWS CLI or AWS API.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "ViewOwnUserInfo",
            "Effect": "Allow",
            "Action": [
                "iam:GetUserPolicy",
                "iam:ListGroupsForUser",
                "iam:ListAttachedUserPolicies",
                "iam:ListUserPolicies",
                "iam:GetUser"
            ],
            "Resource": ["arn:aws:iam::*:user/${aws:username}"]
        },
        {
            "Sid": "NavigateInConsole",
            "Effect": "Allow",
            "Action": [
                "iam:GetGroupPolicy",
                "iam:GetPolicyVersion",
```

```
                "iam:GetPolicy",
                "iam:ListAttachedGroupPolicies",
                "iam:ListGroupPolicies",
                "iam:ListPolicyVersions",
                "iam:ListPolicies",
                "iam:ListUsers"
            ],
            "Resource": "*"
        }
    ]
}
```

Read-only access to AWS Config

The following example shows an AWS managed policy, `AWSConfigUserAccess` that grants read-only access to AWS Config.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "config:Get*",
        "config:Describe*",
        "config:Deliver*",
        "config:List*",
        "config:Select*",
        "tag:GetResources",
        "tag:GetTagKeys",
        "cloudtrail:DescribeTrails",
        "cloudtrail:GetTrailStatus",
        "cloudtrail:LookupEvents"
      ],
      "Resource": "*"
    }
  ]
}
```

In the policy statements, the `Effect` element specifies whether the actions are allowed or denied. The `Action` element lists the specific actions that the user is allowed to perform. The `Resource` element lists the AWS resources the user is allowed to perform those actions on. For policies that

control access to AWS Config actions, the `Resource` element is always set to `*`, a wildcard that means "all resources."

The values in the `Action` element correspond to the APIs that the services support. The actions are preceded by `config:` to indicate that they refer to AWS Config actions. You can use the `*` wildcard character in the `Action` element, such as in the following examples:

- `"Action": ["config:*ConfigurationRecorder"]`

  This allows all AWS Config actions that end with "ConfigurationRecorder" (`StartConfigurationRecorder`, `StopConfigurationRecorder`).
- `"Action": ["config:*"]`

  This allows all AWS Config actions, but not actions for other AWS services.
- `"Action": ["*"]`

  This allows all AWS actions. This permission is suitable for a user who acts as an AWS administrator for your account.

The read-only policy doesn't grant user permission for the actions such as `StartConfigurationRecorder`, `StopConfigurationRecorder`, and `DeleteConfigurationRecorder`. Users with this policy are not allowed to start configuration recorder, stop configuration recorder, or delete configuration recorder. For the list of AWS Config actions, see the AWS Config API Reference.

Full access to AWS Config

The following example shows a policy that grants full access to AWS Config. It grants users the permission to perform all AWS Config actions. It also lets users manage files in Amazon S3 buckets and manage Amazon SNS topics in the account that the user is associated with.

> **Important**
>
> This policy grants broad permissions. Before granting full access, consider starting with a minimum set of permissions and granting additional permissions as necessary. Doing so is better practice than starting with permissions that are too lenient and then trying to tighten them later.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "sns:AddPermission",
                "sns:CreateTopic",
                "sns:DeleteTopic",
                "sns:GetTopicAttributes",
                "sns:ListPlatformApplications",
                "sns:ListTopics",
                "sns:SetTopicAttributes"
            ],
            "Resource": "*"
        },
        {
            "Effect": "Allow",
            "Action": [
                "s3:CreateBucket",
                "s3:GetBucketAcl",
                "s3:GetBucketLocation",
                "s3:GetBucketNotification",
                "s3:GetBucketPolicy",
                "s3:GetBucketRequestPayment",
                "s3:GetBucketVersioning",
                "s3:ListAllMyBuckets",
                "s3:ListBucket",
                "s3:ListBucketMultipartUploads",
                "s3:ListBucketVersions",
                "s3:PutBucketPolicy"
            ],
            "Resource": "arn:aws:s3:::*"
        },
        {
            "Effect": "Allow",
            "Action": [
                "iam:CreateRole",
                "iam:GetRole",
                "iam:GetRolePolicy",
                "iam:ListRolePolicies",
                "iam:ListRoles",
                "iam:PutRolePolicy",
```

```
                "iam:AttachRolePolicy",
                "iam:CreatePolicy",
                "iam:CreatePolicyVersion",
                "iam:DeletePolicyVersion",
                "iam:CreateServiceLinkedRole"
            ],
            "Resource": "*"
        },
        {
            "Effect": "Allow",
            "Action": [
                "iam:PassRole"
            ],
            "Resource": "*",
            "Condition": {
                "StringEquals": {
                    "iam:PassedToService": [
                        "config.amazonaws.com",
                        "ssm.amazonaws.com"
                    ]
                }
            }
        },
        {
            "Effect": "Allow",
            "Action": [
                "cloudtrail:DescribeTrails",
                "cloudtrail:GetTrailStatus",
                "cloudtrail:LookupEvents"
            ],
            "Resource": "*"
        },
        {
            "Effect": "Allow",
            "Action": [
                "config:*",
                "tag:Get*"
            ],
            "Resource": "*"
        },
        {
            "Effect": "Allow",
            "Action": [
                "ssm:DescribeDocument",
```

```
                "ssm:GetDocument",
                "ssm:DescribeAutomationExecutions",
                "ssm:GetAutomationExecution",
                "ssm:ListDocuments",
                "ssm:StartAutomationExecution"
            ],
            "Resource": "*"
        }

    ]
}
```

Supported Resource-Level Permissions for AWS Config Rule API Actions

Resource-level permissions refers to the ability to specify which resources users are allowed to perform actions on. AWS Config supports resource-level permissions for certain AWS Config rule API actions. This means that for certain AWS Config rule actions, you can control the conditions under which when users are allowed to use those actions. These conditions can be actions that must be fulfilled, or specific resources that users are allowed to use.

The following table describes the AWS Config rule API actions that currently support resource-level permissions. It also describes the supported resources and their ARNs for each action. When specifying an ARN, you can use the * wildcard in your paths; for example, when you cannot or do not want to specify exact resource IDs.

> **Important**
>
> If an AWS Config rule API action is not listed in this table, then it does not support resource-level permissions. If an AWS Config rule action does not support resource-level permissions, you can grant users permissions to use the action, but you have to specify a * for the resource element of your policy statement.

API Action	Resources
DeleteConfigRule	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*

API Action	Resources
DeleteEvaluationResults	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
DescribeCompliance ByConfigRule	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
DescribeConfigRuleEvaluatio nStatus	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
GetComplianceDetailsByConfi gRule	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
PutConfigRule	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
StartConfigRulesEvaluation	Config Rule arn:aws:config:*region:accountID* :config-rule/config-rule-*ID*
PutRemediationConfiguration s	Remediation Configuration arn:aws:config:*region:accountId* :remediation-confi guration/*config rule name/remediation configura tion id*

API Action	Resources
DescribeRemediationConfigurations	Remediation Configuration arn:aws:config:*region:accountId* :remediation-configuration/*config rule name/remediation configuration id*
DeleteRemediationConfiguration	Remediation Configuration arn:aws:config:*region:accountId* :remediation-configuration/*config rule name/remediation configuration id*
PutRemediationExceptions	Remediation Configuration arn:aws:config:*region:accountId* :remediation-configuration/*config rule name/remediation configuration id*
DescribeRemediationExceptions	Remediation Configuration arn:aws:config:*region:accountId* :remediation-configuration/*config rule name/remediation configuration id*
DeleteRemediationExceptions	Remediation Configuration arn:aws:config:*region:accountId* :remediation-configuration/*config rule name/remediation configuration id*

For example, you want to allow read access and deny write access to specific rules to specific users.

In the first policy, you allow the AWS Config rule read actions such as `DescribeConfigRuleEvaluationStatus` on the specified rules.

```
{
        "Version": "2012-10-17",
        "Statement": [
```

```
            {
                "Sid": "VisualEditor0",
                "Effect": "Allow",
                "Action": [
                    "config:StartConfigRulesEvaluation",
                    "config:DescribeComplianceByConfigRule",
                    "config:DescribeConfigRuleEvaluationStatus",
                    "config:GetComplianceDetailsByConfigRule"
                ],
                "Resource": [
                    "arn:aws:config:region:accountID:config-rule/config-rule-ID",
                    "arn:aws:config:region:accountID:config-rule/config-rule-ID"
                ]
            }
        ]
    }
```

In the second policy, you deny the AWS Config rule write actions on the specific rule.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "VisualEditor0",
            "Effect": "Deny",
            "Action": [
                "config:PutConfigRule",
                "config:DeleteConfigRule",
                "config:DeleteEvaluationResults"
               ],
            "Resource": "arn:aws:config:region:accountID:config-rule/config-rule-ID"
           }
      ]
   }
```

With resource-level permissions, you can allow read access and deny write access to perform specific actions on AWS Config rule API actions.

Supported Resource-Level Permissions for Multi-Account Multi-Region Data Aggregation

You can use resource-level permissions to control a user's ability to perform specific actions on multi-account multi-region data aggregation. The following AWS Config `Aggregator` APIs support resource level permissions:

- BatchGetAggregateResourceConfig
- DeleteConfigurationAggregator
- DescribeAggregateComplianceByConfigRules
- DescribeAggregateComplianceByConformancePacks
- DescribeConfigurationAggregatorSourcesStatus
- GetAggregateComplianceDetailsByConfigRule
- GetAggregateConfigRuleComplianceSummary
- GetAggregateConformancePackComplianceSummary
- GetAggregateDiscoveredResourceCounts
- GetAggregateResourceConfig
- ListAggregateDiscoveredResources
- PutConfigurationAggregator
- SelectAggregateResourceConfig

For example, you can restrict access to resource data from specific users by creating two aggregators `AccessibleAggregator` and `InAccessibleAggregator` and attaching an IAM policy that allows access to `AccessibleAggregator` but denies access to `InAccessibleAggregator`.

IAM Policy for AccessibleAggregator

In this policy, you allow access to the supported aggregator actions for the AWS Config Amazon Resource Name (ARN) that you specify. In this example, the AWS Config ARN is `arn:aws:config:ap-northeast-1:`*`AccountID`*`:config-aggregator/config-aggregator-mocpsqhs`.

```
{
    "Version": "2012-10-17",
    "Statement": [
```

```
        {
            "Sid": "ConfigAllow",
            "Effect": "Allow",
            "Action": [
                "config:BatchGetAggregateResourceConfig",
                "config:DeleteConfigurationAggregator",
                "config:DescribeAggregateComplianceByConfigRules",
                "config:DescribeAggregateComplianceByConformancePacks",
                "config:DescribeConfigurationAggregatorSourcesStatus",
                "config:GetAggregateComplianceDetailsByConfigRule",
                "config:GetAggregateConfigRuleComplianceSummary",
                "config:GetAggregateConformancePackComplianceSummary",
                "config:GetAggregateDiscoveredResourceCounts",
                "config:GetAggregateResourceConfig",
                "config:ListAggregateDiscoveredResources",
                "config:PutConfigurationAggregator",
                "config:SelectAggregateResourceConfig"
            ],
            "Resource": "arn:aws:config:ap-northeast-1:AccountID:config-aggregator/
config-aggregator-mocpsqhs"
        }
    ]
}
```

IAM Policy for InAccessibleAggregator

In this policy, you deny access to the supported aggregator actions for the AWS Config ARN that you specify. In this example, the AWS Config ARN is `arn:aws:config:ap-northeast-1:`*`AccountID`*`:config-aggregator/config-aggregator-pokxzldx`.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "ConfigDeny",
            "Effect": "Deny",
            "Action": [
                "config:BatchGetAggregateResourceConfig",
                "config:DeleteConfigurationAggregator",
                "config:DescribeAggregateComplianceByConfigRules",
                "config:DescribeAggregateComplianceByConformancePacks",
                "config:DescribeConfigurationAggregatorSourcesStatus",
                "config:GetAggregateComplianceDetailsByConfigRule",
```

```
                "config:GetAggregateConfigRuleComplianceSummary",
                "config:GetAggregateConformancePackComplianceSummary",
                "config:GetAggregateDiscoveredResourceCounts",
                "config:GetAggregateResourceConfig",
                "config:ListAggregateDiscoveredResources",
                "config:PutConfigurationAggregator",
                "config:SelectAggregateResourceConfig"
            ],
            "Resource": "arn:aws:config:ap-northeast-1:AccountID:config-aggregator/
config-aggregator-pokxzldx"
        }
    ]
}
```

If a user of the developer group tries to perform any of these actions on the AWS Config ARN that you specified, that user will get an access denied exception.

Checking User Access Permissions

To show the aggregators that you have created, run the following AWS CLI command:

```
aws configservice describe-configuration-aggregators
```

When command has successfully completed, you will be able to see the details for all the aggregators associated with your account. In this example, those are `AccessibleAggregator` and `InAccessibleAggregator`:

```
{
    "ConfigurationAggregators": [
        {
            "ConfigurationAggregatorArn": "arn:aws:config:ap-
northeast-1:AccountID:config-aggregator/config-aggregator-mocpsqhs",
            "CreationTime": 1517942461.442,
            "ConfigurationAggregatorName": "AccessibleAggregator",
            "AccountAggregationSources": [
                {
                    "AllAwsRegions": true,
                    "AccountIds": [
                        "AccountID1",
                        "AccountID2",
                        "AccountID3"
                    ]
```

```
                }
            ],
            "LastUpdatedTime": 1517942461.455
        },
        {
            "ConfigurationAggregatorArn": "arn:aws:config:ap-
northeast-1:AccountID:config-aggregator/config-aggregator-pokxzldx",
            "CreationTime": 1517942461.442,
            "ConfigurationAggregatorName": "InAccessibleAggregator",
            "AccountAggregationSources": [
                {
                    "AllAwsRegions": true,
                    "AccountIds": [
                        "AccountID1",
                        "AccountID2",
                        "AccountID3"
                    ]
                }
            ],
            "LastUpdatedTime": 1517942461.455
        }
    ]
}
```

Note

For `account-aggregation-sources` enter a comma-separated list of AWS account IDs for which you want to aggregate data. Wrap the account IDs in square brackets, and be sure to escape quotation marks (for example, `"[{\"AccountIds\": [\"AccountID1\", \"AccountID2\",\"AccountID3\"],\"AllAwsRegions\": true}]"`).

Attach the following IAM policy to deny access to `InAccessibleAggregator`, or the aggregator to which you want to deny access.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "ConfigDeny",
            "Effect": "Deny",
            "Action": [
```

```
                "config:BatchGetAggregateResourceConfig",
                "config:DeleteConfigurationAggregator",
                "config:DescribeAggregateComplianceByConfigRules",
                "config:DescribeAggregateComplianceByConformancePacks",
                "config:DescribeConfigurationAggregatorSourcesStatus",
                "config:GetAggregateComplianceDetailsByConfigRule",
                "config:GetAggregateConfigRuleComplianceSummary",
                "config:GetAggregateConformancePackComplianceSummary",
                "config:GetAggregateDiscoveredResourceCounts",
                "config:GetAggregateResourceConfig",
                "config:ListAggregateDiscoveredResources",
                "config:PutConfigurationAggregator",
                "config:SelectAggregateResourceConfig"
            ],
            "Resource": "arn:aws:config:ap-northeast-1:AccountID:config-aggregator/
config-aggregator-pokxzldx"
        }
    ]
}
```

Next, you can confirm that the IAM policy works for restricting access to rules for a specific aggregator:

```
aws configservice get-aggregate-compliance-details-by-config-rule --configuration-
aggregator-name InAccessibleAggregator --config-rule-name rule name --account-
id AccountID --aws-region AwsRegion
```

The command should return an access denied exception:

```
An error occurred (AccessDeniedException) when calling the
 GetAggregateComplianceDetailsByConfigRule operation: User:
 arn:aws:iam::AccountID:user/ is not
authorized to perform: config:GetAggregateComplianceDetailsByConfigRule on resource:
 arn:aws:config:AwsRegion-1:AccountID:config-aggregator/config-aggregator-pokxzldx
```

AWS managed policies for AWS Config

An AWS managed policy is a standalone policy that is created and administered by AWS. AWS managed policies are designed to provide permissions for many common use cases so that you can start assigning permissions to users, groups, and roles.

Keep in mind that AWS managed policies might not grant least-privilege permissions for your specific use cases because they're available for all AWS customers to use. We recommend that you reduce permissions further by defining customer managed policies that are specific to your use cases.

You cannot change the permissions defined in AWS managed policies. If AWS updates the permissions defined in an AWS managed policy, the update affects all principal identities (users, groups, and roles) that the policy is attached to. AWS is most likely to update an AWS managed policy when a new AWS service is launched or new API operations become available for existing services.

For more information, see AWS managed policies in the *IAM User Guide*.

AWS managed policy: AWSConfigServiceRolePolicy

AWS Config uses the service-linked role named **AWSServiceRoleForConfig** to call other AWS services on your behalf. When you use the AWS Management Console to set up AWS Config, this SLR is automatically created by AWS Config if you select the option to use the AWS Config SLR instead of your own AWS Identity and Access Management (IAM) service role.

The **AWSServiceRoleForConfig** SLR contains the managed policy `AWSConfigServiceRolePolicy`. This managed policy contains read-only and write-only permissions for AWS Config resources and read-only permissions for resources in other services that AWS Config supports. For more information, see Supported Resource Types for AWS Config and Using Service-Linked Roles for AWS Config.

View the policy: AWSConfigServiceRolePolicy.

> **Recommended: Use the Service-linked role**
>
> It is recommended that you use the service-linked role unless you have a particular use case. A service-linked role adds all the necessary permissions for AWS Config to run as expected. Some features such as service-linked configuration recorders require you to use the service-linked role.

AWS managed policy: AWS_ConfigRole

To record your AWS resource configurations, AWS Config requires IAM permissions to get the configuration details about your resources. If you want to create an IAM role for AWS Config, you can use the managed policy `AWS_ConfigRole` and attach it to your IAM role.

This IAM policy is updated each time AWS Config adds support for an AWS resource type. This means that AWS Config will continue to have the required permissions to record configuration data of supported resource types as long as the **AWS_ConfigRole** role has this managed policy attached. For more information, see Supported Resource Types for AWS Config and Permissions for the IAM Role Assigned to AWS Config.

View the policy: AWS_ConfigRole.

AWS managed policy: AWSConfigUserAccess

This IAM policy provides access to use AWS Config, including searching by tags on resources and reading all tags. This does not provide permission to configure AWS Config, which requires administrative privileges.

View the policy: AWSConfigUserAccess.

AWS managed policy: ConfigConformsServiceRolePolicy

To deploy and manage conformance packs, AWS Config requires IAM permissions and certain permissions from other AWS services. These allow you to deploy and manage conformance packs with full functionality and are updated each time AWS Config adds new functionality for conformance packs. For more information on conformance packs, see Conformance packs.

View the policy: ConfigConformsServiceRolePolicy.

AWS managed policy: AWSConfigRulesExecutionRole

To deploy AWS Custom Lambda Rules, AWS Config requires IAM permissions and certain permissions from other AWS services. These allow AWS Lambda functions to access the AWS Config API and the configuration snapshots that AWS Config delivers periodically to Amazon S3. This access is required by functions that evaluate configuration changes for AWS Custom Lambda rules and is updated each time AWS Config adds new functionality. For more information on AWS Custom Lambda Rules, see Creating AWS Config Custom Lambda Rules. For more information on configuration snapshots, see Concepts | Configuration Snapshot. For more information on the delivery of configuration snapshots, see Managing the Delivery Channel.

View the policy: AWSConfigRulesExecutionRole.

AWS managed policy: AWSConfigMultiAccountSetupPolicy

To centrally deploy, update, and delete AWS Config rules and conformance packs across member accounts in an organization in AWS Organizations, AWS Config requires IAM permissions and certain permissions from other AWS services. This managed policy is updated each time AWS Config adds new functionality for multi-account setup. For more information, see Managing AWS Config Rules Across All Accounts in Your Organization and Managing Conformance Packs Across All Accounts in Your Organization.

View the policy: AWSConfigMultiAccountSetupPolicy.

AWS managed policy: AWSConfigRoleForOrganizations

To allow AWS Config to call read-only AWS Organizations APIs, AWS Config requires IAM permissions and certain permissions from other AWS services. This managed policy is updated each time AWS Config adds new functionality for multi-account setup. For more information, see Managing AWS Config Rules Across All Accounts in Your Organization and Managing Conformance Packs Across All Accounts in Your Organization.

View the policy: AWSConfigRoleForOrganizations.

AWS managed policy: AWSConfigRemediationServiceRolePolicy

To allow AWS Config to remediate `NON_COMPLIANT` resources on your behalf, AWS Config requires IAM permissions and certain permissions from other AWS services. This managed policy is updated each time AWS Config adds new functionality for remediation. For more information on remediation, see Remediating Noncompliant Resources with AWS Config Rules. For more information on the conditions that initiate the possible AWS Config evaluation results, see Concepts | AWS Config Rules.

View the policy: AWSConfigRemediationServiceRolePolicy.

AWS Config updates to AWS managed policies

View details about updates to AWS managed policies for AWS Config since this service began tracking these changes. For automatic alerts about changes to this page, subscribe to the RSS feed on the AWS Config Document history page.

Change	Description	Date
AWS_ConfigRole – Add "bedrock:GetGuardrail", "bedrock:GetInferenceProfile", "bedrock:GetKnowledgeBase", "bedrock:ListGuardrails", "bedrock:ListInferenceProfiles", "bedrock:ListKnowledgeBases", "bedrock:ListTagsForResource"	This policy now supports additional permissions for Amazon Bedrock.	May 27, 2025
AWSConfigServiceRolePolicy – Add "bedrock:GetGuardrail", "bedrock:GetInferenceProfile", "bedrock:GetKnowledgeBase", "bedrock:ListGuardrails", "bedrock:ListInferenceProfiles", "bedrock:ListKnowledgeBases", "bedrock:ListTagsForResource"	This policy now supports additional permissions for Amazon Bedrock.	May 27, 2025
AWS_ConfigRole – Add "b2bi:GetPartnership", "b2bi:GetProfile", "b2bi:ListPartnerships", "b2bi:ListProfiles", "bedrock:ListAgents", "cleanrooms:GetConfiguredTable", "cleanrooms:GetConfiguredTableAnalysisRule", "cleanrooms:GetMembership", "cleanrooms:GetPrivacyBudgetTemplate", "cleanrooms:ListConfiguredTables", "cleanrooms:ListMemberships", "cleanrooms:ListPrivacyB	This policy now supports additional permissions for AWS B2B Data Interchange, Amazon Bedrock, AWS Clean Rooms, AWS CodeConnections, AWS Direct Connect, AWS Database Migration Service (AWS DMS), Amazon CloudWatch Logs, Amazon Macie, Amazon Managed Blockchain, Amazon Q Business, Route 53 Profiles, Amazon Simple Storage Service (Amazon	April 08, 2025

Change	Description	Date
udgetTemplates", "codeconnections:GetConnection", "codeconnections:ListConnections", "codeconnections:ListTagsForResource", "directconnect:DescribeConnections", "dms:DescribeReplicationConfigs", "logs:DescribeAccountPolicies", "logs:DescribeResourcePolicies", "macie2:ListAutomatedDiscoveryAccounts", "managedblockchain:GetAccessor", "managedblockchain:ListAccessors", "qbusiness:GetApplication", "qbusiness:ListApplications", "qbusiness:ListTagsForResource", "route53profiles:GetProfile", "route53profiles:GetProfileAssociation", "route53profiles:ListProfileAssociations", "route53profiles:ListProfiles", "route53profiles:ListTagsForResource", "s3:GetAccessGrantsInstance", "s3:GetAccessGrantsLocation", "s3:ListAccessGrantsInstances", "s3:ListAccessGrantsLocations", "sagemaker:DescribeCluster", "sagemaker:DescribeMlflowTrackingServer", "sagemaker:DescribeStudioLifecycleConfig", "sagemaker:ListClusters", "sagemaker:ListMlflowTrackingServers	S3), Amazon SageMaker AI, AWS Security Hub, and AWS Systems Manager Incident Manager, AWS Systems Manager Incident Manager Contacts, and AWS Systems Manager.	

Change	Description	Date
", "sagemaker:ListStudioLifecycleConfigs", "securityhub:DescribeStandardsControls", "securityhub:GetEnabledStandards", "ssm-contacts:GetContact", "ssm-contacts:GetContactChannel", "ssm-contacts:ListContactChannels", "ssm-contacts:ListContacts", "ssm-incidents:GetResponsePlan", "ssm-incidents:ListResponsePlans", "ssm-incidents:ListTagsForResource", "ssm:DescribeInstanceInformation"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "b2bi:GetPartnership", "b2bi:GetProfile", "b2bi:ListPartnerships", "b2bi:ListProfiles", "bedrock:ListAgents", "cleanrooms:GetConfiguredTable", "cleanrooms:GetConfiguredTableAnalysisRule", "cleanrooms:GetMembership", "cleanrooms:GetPrivacyBudgetTemplate", "cleanrooms:ListConfiguredTables", "cleanrooms:ListMemberships", "cleanrooms:ListPrivacyBudgetTemplates", "codeconnections:GetConnection", "codeconnections:ListConnections", "codeconnections:ListTagsForResource", "directconnect:DescribeConnections", "dms:DescribeReplicationConfigs", "logs:DescribeAccountPolicies", "logs:DescribeResourcePolicies", "macie2:ListAutomatedDiscoveryAccounts", "managedblockchain:GetAccessor", "managedblockchain:ListAccessors", "qbusiness:GetApplication", "qbusiness:ListApplications", "qbusiness:ListTagsForResource", "route53profiles:GetProfile", "route53profiles:GetProfileAssociation",	This policy now supports additional permissions for AWS B2B Data Interchange, Amazon Bedrock, AWS Clean Rooms, AWS CodeConnections, AWS Direct Connect, AWS Database Migration Service (AWS DMS), Amazon CloudWatch Logs, Amazon Macie, Amazon Managed Blockchain, Amazon Q Business, Route 53 Profiles, Amazon Simple Storage Service (Amazon S3), Amazon SageMaker AI, AWS Security Hub, and AWS Systems Manager Incident Manager, AWS Systems Manager Incident Manager Contacts, and AWS Systems Manager. This policy also now supports permission to access all Amazon API Gateway domain names by including the resource pattern `"arn:aws:apigateway:::/domainnames/ "`.	April 08, 2025

Change	Description	Date
"route53profiles:ListProfileAssociations", "route53profiles:ListProfiles", "route53profiles:ListTagsForResource", "s3:GetAccessGrantsInstance", "s3:GetAccessGrantsLocation", "s3:ListAccessGrantsInstances", "s3:ListAccessGrantsLocations", "sagemaker:DescribeCluster", "sagemaker:DescribeMlflowTrackingServer", "sagemaker:DescribeStudioLifecycleConfig", "sagemaker:ListClusters", "sagemaker:ListMlflowTrackingServers", "sagemaker:ListStudioLifecycleConfigs", "securityhub:DescribeStandardsControls", "securityhub:GetEnabledStandards", "ssm-contacts:GetContact", "ssm-contacts:GetContactChannel", "ssm-contacts:ListContactChannels", "ssm-contacts:ListContacts", "ssm-incidents:GetResponsePlan", "ssm-incidents:ListResponsePlans", "ssm-incidents:ListTagsForResource", "ssm:DescribeInstanceInformation"		
AWS_ConfigRole – Add "ec2:GetAllowedImagesSettings"	This policy now supports additional permissions for Amazon Elastic Compute Cloud (Amazon EC2).	March 4, 2025

Change	Description	Date
AWSConfigServiceRolePolicy – Add "ec2:GetAllowedImagesSettings"	This policy now supports additional permissions for Amazon Elastic Compute Cloud (Amazon EC2).	March 4, 2025
AWS_ConfigRole – Add "cleanrooms-ml:GetTrainingDataset", "cleanrooms-ml:ListTrainingDatasets", "comprehend:DescribeFlywheel", "comprehend:ListFlywheels", "comprehend:ListTagsForResource", "ec2:GetSnapshotBlockPublicAccessState", "omics:GetAnnotationStore", "omics:GetRunGroup", "omics:GetSequenceStore", "omics:GetVariantStore", "omics:ListAnnotationStores", "omics:ListRunGroups", "omics:ListSequenceStores", "omics:ListTagsForResource", "omics:ListVariantStores", "s3express:GetEncryptionConfiguration", "s3express:GetLifecycleConfiguration", "ses:GetDedicatedIpPool", "ses:GetDedicatedIps", and "ses:ListDedicatedIpPools"	This policy now supports additional permissions for AWS Clean Rooms, Amazon Comprehend, Amazon Elastic Compute Cloud (Amazon EC2), AWS HealthOmics, Amazon Simple Storage Service (Amazon S3), and Amazon Simple Email Service (Amazon SES).	January 16, 2025

Change	Description	Date
AWSConfigServiceRolePolicy – Add "cleanrooms-ml:GetTrainingDataset", "cleanrooms-ml:ListTrainingDatasets", "comprehend:DescribeFlywheel", "comprehend:ListFlywheels", "comprehend:ListTagsForResource", "ec2:GetSnapshotBlockPublicAccessState", "omics:GetAnnotationStore", "omics:GetRunGroup", "omics:GetSequenceStore", "omics:GetVariantStore", "omics:ListAnnotationStores", "omics:ListRunGroups", "omics:ListSequenceStores", "omics:ListTagsForResource", "omics:ListVariantStores", "s3express:GetEncryptionConfiguration", "s3express:GetLifecycleConfiguration", "ses:GetDedicatedIpPool", "ses:GetDedicatedIps", and "ses:ListDedicatedIpPools"	This policy now supports additional permissions for AWS Clean Rooms, Amazon Comprehend, Amazon Elastic Compute Cloud (Amazon EC2), AWS HealthOmics, Amazon Simple Storage Service (Amazon S3), and Amazon Simple Email Service (Amazon SES).	January 16, 2025
AWSConfigServiceRolePolicy – Add "organizations:ListAWSServiceAccessForOrganization"	This policy now supports additional permissions for AWS Organizations.	December 18, 2024

Change	Description	Date
AWS_ConfigRole – Add "app-integrations:GetApplication", "app-integrations:ListApplications", "app-integrations:ListTagsForResource", "appconfig:GetExtension", "appconfig:ListExtensions", "cloudtrail:GetInsightSelectors", "connect:DescribeQueue", "connect:DescribeRoutingProfile", "connect:DescribeSecurityProfile", "connect:ListQueueQuickConnects", "connect:ListQueues", "connect:ListRoutingProfileQueues", "connect:ListRoutingProfiles", "connect:ListSecurityProfileApplications", "connect:ListSecurityProfilePermissions", "connect:ListSecurityProfiles", "datazone:GetDomain", "datazone:ListDomains", "devops-guru:ListNotificationChannels", "glue:GetRegistry", "glue:ListRegistries", "identitystore:DescribeGroup", "identitystore:DescribeGroupMembership" "identitystore:ListGroupMemberships", "identitystore:ListGroups", "iot:DescribeThingGroup", "iot:DescribeThingType", "iot:ListThingGroups", "iot	This policy now supports additional permissions for AWS AppConfig, AWS CloudTrail, Amazon Connect, Amazon DataZone, Amazon DevOps Guru, AWS Glue, Identity Store, AWS IoT, AWS IoT FleetWise, AWS IoT Wireless, Amazon Interactive Video Service (Amazon IVS), Amazon CloudWatch Logs, Amazon CloudWatch Observability Access Manager, AWS Payment Cryptography, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, Amazon Simple Storage Service (Amazon S3), Amazon EventBridge Scheduler, AWS Systems Manager, and Amazon VPC Lattice.	November 7, 2024

Change	Description	Date
:ListThingTypes", "iotfleetwise:GetDecoderManifest", "iotfleetwise:GetFleet", "iotfleetwise:GetModelManifest", "iotfleetwise:GetSignalCatalog", "iotfleetwise:GetVehicle", "iotfleetwise:ListDecoderManifestNetworkInterfaces", "iotfleetwise:ListDecoderManifests", "iotfleetwise:ListDecoderManifestSignals", "iotfleetwise:ListFleets", "iotfleetwise:ListModelManifestNodes", "iotfleetwise:ListModelManifests", "iotfleetwise:ListSignalCatalogNodes", "iotfleetwise:ListSignalCatalogs", "iotfleetwise:ListTagsForResource", "iotfleetwise:ListVehicles", "iotwireless:GetDestination", "iotwireless:GetDeviceProfile", "iotwireless:GetWirelessGateway", "iotwireless:ListDestinations", "iotwireless:ListDeviceProfiles", "iotwireless:ListWirelessGateways", "ivschat:GetLoggingConfiguration", "ivschat:GetRoom" "ivschat:ListLoggingConfigurations", "ivschat:ListRooms", "ivschat:ListTagsForResource", "logs:GetLogAnomalyDetector", "logs:ListLogAnomalyDete		

Change	Description	Date
ctors", "oam:GetSink" "oam :GetSinkPolicy", "oam:List Sinks", "payment-cryptograp hy:GetAlias", "payment- cryptography:GetKey", "payment-cryptography:L istAliases", "payment-crypt ography:ListKeys", "payment -cryptography:ListTagsForRe source", "rds:DescribeDBPro xyTargetGroups", "rds:Desc ribeDBProxyTargets", "rekog nition:DescribeProjects", "s3:GetStorageLensGroup", "s3:ListStorageLensGroups", "s3:ListTagsForResource", " scheduler:GetScheduleGroup" , "scheduler:ListScheduleGrou ps", "scheduler:ListTagsFor Resource", "ssm:GetServiceSet ting", "vpc-lattice:GetAcce ssLogSubscription", "vpc-la ttice:GetService", "vpc-latt ice:GetServiceNetwork", "vp c-lattice:GetTargetGroup", "vpc-lattice:ListAccessLogS ubscriptions", "vpc-lattice :ListServiceNetworks", "vpc- lattice:ListServices", "vpc-lat tice:ListTagsForResource", "vpc-lattice:ListTargetGrou ps", and "vpc-lattice:ListT argets"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "app-integrations:GetApplication", "app-integrations:ListApplications", "app-integrations:ListTagsForResource", "appconfig:GetExtension", "appconfig:ListExtensions", "cloudtrail:GetInsightSelectors", "connect:DescribeQueue", "connect:DescribeRoutingProfile", "connect:DescribeSecurityProfile", "connect:ListQueueQuickConnects", "connect:ListQueues", "connect:ListRoutingProfileQueues", "connect:ListRoutingProfiles", "connect:ListSecurityProfileApplications", "connect:ListSecurityProfilePermissions", "connect:ListSecurityProfiles", "datazone:GetDomain", "datazone:ListDomains", "devops-guru:ListNotificationChannels", "glue:GetRegistry", "glue:ListRegistries", "identitystore:DescribeGroup", "identitystore:DescribeGroupMembership" "identitystore:ListGroupMemberships", "identitystore:ListGroups", "iot:DescribeThingGroup", "iot:DescribeThingType",	This policy now supports additional permissions for AWS AppConfig, AWS CloudTrail, Amazon Connect, Amazon DataZone, Amazon DevOps Guru, AWS Glue, Identity Store, AWS IoT, AWS IoT FleetWise, AWS IoT Wireless, Amazon Interactive Video Service (Amazon IVS), Amazon CloudWatch Logs, Amazon CloudWatch Observability Access Manager, AWS Payment Cryptography, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, Amazon Simple Storage Service (Amazon S3), Amazon EventBridge Scheduler, AWS Systems Manager, and Amazon VPC Lattice.	November 7, 2024

Change	Description	Date
"iot:ListThingGroups", "iot :ListThingTypes", "iotfleet wise:GetDecoderManifest", "iotfleetwise:GetFleet", "iotfleetwise:GetModelManif est", "iotfleetwise:GetSign alCatalog", "iotfleetwise:GetV ehicle", "iotfleetwise:List DecoderManifestNetworkInter faces", "iotfleetwise:ListD ecoderManifests", "iotfleet wise:ListDecoderManifestSig nals", "iotfleetwise:ListFl eets", "iotfleetwise:ListMo delManifestNodes", "iotflee twise:ListModelManifests", "iotfleetwise:ListSignalCat alogNodes", "iotfleetwise:L istSignalCatalogs", "iotfle etwise:ListTagsForResource" , "iotfleetwise:ListVehicles", "iotwireless:GetDestination", "iotwireless:GetDeviceProfi le", "iotwireless:GetWirele ssGateway", "iotwireless:Li stDestinations", "iotwirele ss:ListDeviceProfiles", "io twireless:ListWirelessGatew ays", "ivschat:GetLoggingCo nfiguration", "ivschat: GetRoom" "ivschat:ListLoggi ngConfigurations", "ivschat: ListRooms", "ivschat:ListTa gsForResource", "logs:Get LogAnomalyDetector",		

Change	Description	Date
"logs:ListLogAnomalyDetectors", "oam:GetSink" "oam:GetSinkPolicy", "oam:ListSinks", "payment-cryptography:GetAlias", "payment-cryptography:GetKey", "payment-cryptography:ListAliases", "payment-cryptography:ListKeys", "payment-cryptography:ListTagsForResource", "rds:DescribeDBProxyTargetGroups", "rds:DescribeDBProxyTargets", "rekognition:DescribeProjects", "s3:GetStorageLensGroup", "s3:ListStorageLensGroups", "s3:ListTagsForResource", "scheduler:GetScheduleGroup", "scheduler:ListScheduleGroups", "scheduler:ListTagsForResource", "ssm:GetServiceSetting", "vpc-lattice:GetAccessLogSubscription", "vpc-lattice:GetService", "vpc-lattice:GetServiceNetwork", "vpc-lattice:GetTargetGroup", "vpc-lattice:ListAccessLogSubscriptions", "vpc-lattice:ListServiceNetworks", "vpc-lattice:ListServices", "vpc-lattice:ListTagsForResource", "vpc-lattice:ListTargetGroups", and "vpc-lattice:ListTargets"		

Change	Description	Date
AWS_ConfigRole – Add "aoss:BatchGetCollection," "aoss:BatchGetLifecyclePolicy," "aoss:BatchGetVpcEndpoint," "aoss:GetAccessPolicy," "aoss:GetSecurityConfig," "aoss:GetSecurityPolicy," "aoss:ListAccessPolicies," "aoss:ListCollections," "aoss:ListLifecyclePolicies," "aoss:ListSecurityConfigs," "aoss:ListSecurityPolicies," "aoss:ListVpcEndpoints," "appstream:DescribeAppBlockBuilders," "backup:GetRestoreTestingPlan," "backup:GetRestoreTestingSelection", "backup:ListRestoreTestingPlans," "backup:ListRestoreTestingSelections," "cloudTrail:GetChannel, "cloudTrail:ListChannels," "glue:GetTrigger," "glue:ListTriggers, "imagebuilder:GetLifecyclePolicy," "imagebuilder:ListLifecyclePolicies," "iot:DescribeBillingGroup," "iot:ListBillingGroups," "ivs:GetEncoderConfiguration," "ivs:GetPlaybackRestrictionPolicy," "ivs:GetStage," "ivs:GetStorageConfiguration," "ivs:ListEncoderConfigurations," "ivs:ListPlaybackRest	This policy now supports additional permissions for Amazon OpenSearch Service Severless, Amazon AppStream, AWS Backup, AWS CloudTrail, AWS Glue, EC2 Image Builder, AWS IoT, Amazon Interactive Video Service (Amazon IVS), AWS Elemental MediaConnect, AWS Elemental MediaTailor, AWS HealthOmics, and Amazon EventBridge Scheduler.	September 16, 2024

Change	Description	Date
rictionPolicies," "ivs:List Stages," "ivs:ListStorageConfigurations," "mediaconnect:DescribeBridge", "mediaconnect:DescribeGatewa," "mediaconnect:ListBridges," "mediaconnect:ListGateways", "mediatailor:DescribeChannel," "mediatailor:DescribeLiveSource," "mediatailor:DescribeSourceLocation," "mediatailor:DescribeVodSource", "mediatailor:ListChannels," "mediatailor:ListLiveSources", "mediatailor:ListSourceLocations," "mediatailor:ListVodSources," "omics:GetWorkflow," "omics:ListWorkflows," "scheduler:GetSchedule," and "scheduler:ListSchedules"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "aoss:BatchGetCollection," "aoss:BatchGetLifecyclePolicy," "aoss:BatchGetVpcEndpoint," "aoss:GetAccessPolicy," "aoss:GetSecurityConfig," "aoss:GetSecurityPolicy," "aoss:ListAccessPolicies," "aoss:ListCollections," "aoss:ListLifecyclePolicies," "aoss:ListSecurityConfigs," "aoss:ListSecurityPolicies," "aoss:ListVpcEndpoints," "appstream:DescribeAppBlockBuilders," "backup:GetRestoreTestingPlan," "backup:GetRestoreTestingSelection", "backup:ListRestoreTestingPlans," "backup:ListRestoreTestingSelections," "cloudTrail:GetChannel, "cloudTrail:ListChannels," "glue:GetTrigger," "glue:ListTriggers, "imagebuilder:GetLifecyclePolicy," "imagebuilder:ListLifecyclePolicies," "iot:DescribeBillingGroup," "iot:ListBillingGroups," "ivs:GetEncoderConfiguration," "ivs:GetPlaybackRestrictionPolicy," "ivs:GetStage," "ivs:GetStorageConfiguration," "ivs:ListEncoderConfigurations," "ivs:ListPla	This policy now supports additional permissions for Amazon OpenSearch Service Severless, Amazon AppStream, AWS Backup, AWS CloudTrail, AWS Glue, EC2 Image Builder, AWS IoT, Amazon Interactive Video Service (Amazon IVS), AWS Elemental MediaConnect, AWS Elemental MediaTailor, AWS HealthOmics, and Amazon EventBridge Scheduler.	September 16, 2024

Change	Description	Date
ybackRestrictionPolicies," "ivs:ListStages," "ivs:List StorageConfigurations," "mediaconnect:DescribeBridge", "mediaconnect:DescribeGatewa," "mediaconnect:List Bridges," "mediaconnect:ListGateways", "mediatailor:DescribeChannel," "mediatailor:DescribeLiveSource," "mediatailor:DescribeSourceLocation," "mediatailor:DescribeVodSource", "mediatailor:ListChannels," "mediatailor:ListLiveSources", "mediatailor:ListSourceLocations," "mediatailor:ListVodSources," "omics:GetWorkflow," "omics:ListWorkflows," "scheduler:GetSchedule," and "scheduler:ListSchedules"		
AWS_ConfigRole – Add "elasticfilesystem:DescribeTags," "redshift:DescribeTags," and "ssm-sap:ListTagsForResource"	This policy now supports additional permissions for Amazon Elastic File System (Amazon EFS), Amazon Redshift and AWS Systems Manager for SAP.	June 17, 2024
AWSConfigServiceRolePolicy – Add "elasticfilesystem:DescribeTags," "redshift:DescribeTags," and "ssm-sap:ListTagsForResource"	This policy now supports additional permissions for Amazon Elastic File System (Amazon EFS), Amazon Redshift and AWS Systems Manager for SAP.	June 17, 2024

Change	Description	Date
AWS_ConfigRole – Add "aps:DescribeAlertManagerDefinition," "cloudwatch:DescribeAlarmsForMetric," "cognito-identity:DescribeIdentityPool, "cognito-identity:GetPrincipalTagAttributeMap," "elasticache:DescribeCacheSecurityGroups," "elasticache:DescribeUserGroups," "elasticache:DescribeUsers," "elasticache:DescribeGlobalReplicationGroups," "fsx:DescribeDataRepositoryAssociations," "glue:GetDatabase," "glue:GetDatabases," "iam:ListUsers," "lambda:GetLayerVersion," "lambda:ListLayers," "lambda:ListLayerVersions," "ram:GetPermission," "ram:ListPermissionAssociations," "ram:ListPermissions," "ram:ListPermissionVersions," "redshift-serverless:GetNamespace," "redshift-serverless:GetWorkgroup," "redshift-serverless:ListNamespaces," "redshift-serverless:ListTagsForResource," "redshift-serverless:ListWorkgroups," "sagemaker:DescribeInferenceExperiment," "sagemaker:ListInferenceExperiments," and "sns:GetSMSSandboxAccountStatus"	This policy now supports additional permissions for Amazon Managed Service for Prometheus, Amazon CloudWatch, Amazon Cognito, Amazon ElastiCache, Amazon FSx, AWS Glue, AWS Identity and Access Management (IAM), AWS Lambda, AWS RAM, Amazon Redshift Serverless, Amazon SageMaker AI, and Amazon Simple Notification Service (Amazon SNS).	February 22, 2024

Change	Description	Date
AWSConfigServiceRolePolicy – Add "aps:DescribeAlertManagerDefinition," "cloudwatch:DescribeAlarmsForMetric," "cognito-identity:DescribeIdentityPool, "cognito-identity:GetPrincipalTagAttributeMap," "elasticache:DescribeCacheSecurityGroups," "elasticache:DescribeUserGroups," "elasticache:DescribeUsers," "elasticache:DescribeGlobalReplicationGroups," "fsx:DescribeDataRepositoryAssociations," "glue:GetDatabase," "glue:GetDatabases," "iam:ListUsers," "lambda:GetLayerVersion," "lambda:ListLayers," "lambda:ListLayerVersions," "ram:GetPermission," "ram:ListPermissionAssociations," "ram:ListPermissions," "ram:ListPermissionVersions," "redshift-serverless:GetNamespace," "redshift-serverless:GetWorkgroup," "redshift-serverless:ListNamespaces," "redshift-serverless:ListTagsForResource," "redshift-serverless:ListWorkgroups," "sagemaker:DescribeInferenceExperiment," "sagemaker:ListInference	This policy now supports additional permissions for Amazon Managed Service for Prometheus, Amazon CloudWatch, Amazon Cognito, Amazon ElastiCache, Amazon FSx, AWS Glue, AWS Identity and Access Management (IAM), AWS Lambda, AWS RAM, Amazon Redshift Serverless, Amazon SageMaker AI, and Amazon Simple Notification Service (Amazon SNS).	February 22, 2024

Change	Description	Date
Experiments," and "sns:GetSMSSandboxAccountStatus"		
AWSConfigUserAccess – AWS Config starts tracking changes for this AWS managed policy	This policy provides access to use AWS Config, including searching by tags on resources and reading all tags. This does not provide permission to configure AWS Config, which requires administrative privileges.	February 22, 2024
AWS_ConfigRole – Add "appconfig:GetExtensionAssociation," "appconfig:ListExtensionAssociations," "aps:DescribeLoggingConfiguration," "dms:DescribeReplicationTaskAssessmentRuns," "iam:GetOpenIDConnectProvider," "iam:ListOpenIDConnectProviders," "kafka:DescribeVpcConnection," "kafka:GetClusterPolicy," "kafka:ListVpcConnections," "logs:DescribeMetricFilters," "organizations:ListDelegatedAdministrators," "s3:GetBucketPolicyStatus," "s3express:GetBucketPolicy," and "s3express:ListAllMyDirectoryBuckets"	This policy now supports additional permissions for AWS AppConfig, Amazon Managed Service for Prometheus, AWS Database Migration Service (AWS DMS), (AWS Identity and Access Management) IAM, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon CloudWatch Logs, AWS Organizations, and Amazon Simple Storage Service (Amazon S3).	Decemeber 5, 2023

Change	Description	Date
AWSConfigServiceRolePolicy – Add "appconfig:GetExtensionAssociation," "appconfig:ListExtensionAssociations," "aps:DescribeLoggingConfiguration," "dms:DescribeReplicationTaskAssessmentRuns," "iam:GetOpenIDConnectProvider," "iam:ListOpenIDConnectProviders," "kafka:DescribeVpcConnection," "kafka:GetClusterPolicy," "kafka:ListVpcConnections," "logs:DescribeMetricFilters," "organizations:ListDelegatedAdministrators," "s3:GetBucketPolicyStatus," "s3express:GetBucketPolicy," and "s3express:ListAllMyDirectoryBuckets"	This policy now supports additional permissions for AWS AppConfig, Amazon Managed Service for Prometheus, AWS Database Migration Service (AWS DMS), (AWS Identity and Access Management) IAM, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon CloudWatch Logs, AWS Organizations, and Amazon Simple Storage Service (Amazon S3).	December 5, 2023

Change	Description	Date
AWS_ConfigRole – Add "backup:DescribeProtectedResource," "cognito-identity:GetIdentityPoolRoles," "cognito-identity:ListIdentityPools," "cognito-identity:ListTagsForResource," "cognito-idp:DescribeIdentityProvider," "cognito-idp:DescribeResourceServer," "cognito-idp:DescribeUserPool," "cognito-idp:DescribeUserPoolClient," "cognito-idp:DescribeUserPoolDomain," "cognito-idp:GetGroup," "cognito-idp:GetUserPoolMfaConfig," "cognito-idp:ListGroups," "cognito-idp:ListIdentityProviders," "cognito-idp:ListResourceServers," "cognito-idp:ListUserPoolClients," "cognito-idp:ListUserPools," "cognito-idp:ListTagsForResource," "connect:DescribeEvaluationForm," "connect:DescribeInstanceStorageConfig," "connect:DescribePrompt," "connect:DescribeRule," "connect:DescribeUser," "connect:GetTaskTemplate," "connect:ListApprovedOrigins," "connect:ListEvaluationForms," "connect:ListInstanceStorageConfigs," "connect:ListIntegrationAssociation	This policy now supports additional permissions for Amazon Cognito, Amazon Connect, Amazon EMR, AWS Ground Station, AWS Mainframe Modernization, Amazon MemoryDB, AWS Organizations, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, Amazon Route 53, AWS Service Catalog, and AWS Transfer Family.	November 17, 2023

Change	Description	Date
s," "connect:ListPrompts," "connect:ListRules," "connect:ListSecurityKeys," "connect:ListTagsForResource," "connect:ListTaskTemplates," "connect:ListUsers," "emr-containers:DescribeVirtualCluster," "emr-containers:ListVirtualClusters," "emr-serverless:GetApplication," "emr-serverless:ListApplications," "groundstation:GetDataflowEndpointGroup," "groundstation:ListDataflowEndpointGroups," "m2:GetEnvironment," "m2:ListEnvironments," "m2:ListTagsForResource," "memorydb:DescribeAcls," "memorydb:DescribeClusters," "memorydb:DescribeParameterGroups," "memorydb:DescribeParameters," "memorydb:DescribeSubnetGroups," "organizations:ListRoots," "quicksight:DescribeAccountSubscription," "quicksight:DescribeDataSetRefreshProperties," "rds:DescribeEngineDefaultClusterParameters," "redshift:DescribeEndpointAccess," "redshift:DescribeEndpointAuthorization," "route53:GetChange," "route53:ListCidrBlocks," "route53:ListCidrL		

Change	Description	Date
ocations," "serviceCatalog:DescribePortfolioShares," "transfer:DescribeProfile," and "transfer:ListProfiles"		
AWS_ConfigRole – Add "Sid": "AWSConfigServiceRolePolicyStatementID," "Sid": "AWSConfigSLRLogStatementID," "Sid": "AWSConfigSLRLogEventStatementID," and "Sid": "AWSConfigSLRApiGatewayStatementID"	This policy now adds security identifiers (SID) for `AWSConfigServiceRolePolicyStatementID` , `AWSConfigSLRLogStatementID` , `AWSConfigSLRLogEventStatementID` , and `AWSConfigSLRApiGatewayStatementID` .	November 17, 2023

Change	Description	Date
AWSConfigServiceRolePolicy – Add "backup:DescribeProtectedResource," "cognito-identity:GetIdentityPoolRoles," "cognito-identity:ListIdentityPools," "cognito-identity:ListTagsForResource," "cognito-idp:DescribeIdentityProvider," "cognito-idp:DescribeResourceServer," "cognito-idp:DescribeUserPool," "cognito-idp:DescribeUserPoolClient," "cognito-idp:DescribeUserPoolDomain," "cognito-idp:GetGroup," "cognito-idp:GetUserPoolMfaConfig," "cognito-idp:ListGroups," "cognito-idp:ListIdentityProviders," "cognito-idp:ListResourceServers," "cognito-idp:ListUserPoolClients," "cognito-idp:ListUserPools," "cognito-idp:ListTagsForResource," "connect:DescribeEvaluationForm," "connect:DescribeInstanceStorageConfig," "connect:DescribePrompt," "connect:DescribeRule," "connect:DescribeUser," "connect:GetTaskTemplate," "connect:ListApprovedOrigins," "connect:ListEvaluationForms," "connect:ListInstanceStorageConfigs," "connect	This policy now supports additional permissions for Amazon Cognito, Amazon Connect, Amazon EMR, AWS Ground Station, AWS Mainframe Modernization, Amazon MemoryDB, AWS Organizations, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, Amazon Route 53, AWS Service Catalog, and AWS Transfer Family.	November 17, 2023

Change	Description	Date
:ListIntegrationAssociations," "connect:ListPrompts," "connect:ListRules," "connect:ListSecurityKeys," "connect:ListTagsForResource," "connect:ListTaskTemplates," "connect:ListUsers," "emr-containers:DescribeVirtualCluster," "emr-containers:ListVirtualClusters," "emr-serverless:GetApplication," "emr-serverless:ListApplications," "groundstation:GetDataflowEndpointGroup," "groundstation:ListDataflowEndpointGroups," "m2:GetEnvironment," "m2:ListEnvironments," "m2:ListTagsForResource," "memorydb:DescribeAcls," "memorydb:DescribeClusters," "memorydb:DescribeParameterGroups," "memorydb:DescribeParameters," "memorydb:DescribeSubnetGroups," "organizations:ListRoots," "quicksight:DescribeAccountSubscription," "quicksight:DescribeDataSetRefreshProperties," "rds:DescribeEngineDefaultClusterParameters," "redshift:DescribeEndpointAccess," "redshift:DescribeEndpointAuthorization," "route53:GetChange," "route53:ListCid		

Change	Description	Date
rBlocks," "route53:ListCidrLocations," "serviceCatalog:DescribePortfolioShares," "transfer:DescribeProfile," and "transfer:ListProfiles"		
AWSConfigServiceRolePolicy – Add "Sid": "AWSConfigServiceRolePolicyStatementID," "Sid": "AWSConfigSLRLogStatementID," "Sid": "AWSConfigSLRLogEventStatementID," and "Sid": "AWSConfigSLRApiGatewayStatementID"	This policy now adds security identifiers (SID) for `AWSConfigServiceRolePolicyStatementID` , `AWSConfigSLRLogStatementID` , `AWSConfigSLRLogEventStatementID` , and `AWSConfigSLRApiGatewayStatementID` .	November 17, 2023

Change	Description	Date
AWS_ConfigRole – Add "acm-pca:GetCertificateAuthorityCertificate," "appmesh:DescribeMesh," "appmesh:ListGatewayRoutes," "connect:DescribeInstance," "connect:DescribeQuickConnect," "connect:ListQuickConnects," "ecs:DescribeCapacityProviders," "evidently:GetSegment," "evidently:ListSegments," "grafana:DescribeWorkspace," "grafana:DescribeWorkspaceAuthentication," "grafana:DescribeWorkspaceConfiguration," "grafana:DescribeWorkspaceConfiguration," "guardduty:GetMemberDetectors," "inspector2:BatchGetAccountStatus," "inspector2:GetDelegatedAdminAccount," "inspector2:ListMembers," "iot:DescribeCACertificate," "iot:ListCACertificates," "iot:ListTagsForResource," "iottwinmaker:GetSyncJob," "iottwinmaker:ListSyncJobs," "kafka:ListTagsForResource," "kafkaconnect:DescribeConnector," "kafkaconnect:ListConnectors," "lambda:GetCodeSigningConfig," "lambda:ListCodeSigningConfigs," "lambda:ListT	This policy now supports additional permissions for AWS Private CA, AWS App Mesh, Amazon Connect, Amazon Elastic Container Service (Amazon ECS), Amazon CloudWatch Evidently, Amazon Managed Grafana, Amazon GuardDuty, Amazon Inspector, AWS IoT, AWS IoT TwinMaker, Amazon Managed Streaming for Apache Kafka (Amazon MSK), AWS Lambda, AWS Network Manager, AWS Organizations, and Amazon SageMaker AI.	October 4, 2023

Change	Description	Date
ags," "networkmanager:GetConnectPeer," "organizations:DescribeOrganization," "organizations:ListTargetsForPolicy," "sagemaker:DescribeDataQualityJob," "sagemaker:DescribeModelExplainabilityJob," "sagemaker:ListDataQualityJob," and "sagemaker:ExplainabilityJob"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "acm-pca:GetCertificateAuthorityCertificate," "appmesh:DescribeMesh," "appmesh:ListGatewayRoutes," "connect:DescribeInstance," "connect:DescribeQuickConnect," "connect:ListQuickConnects," "ecs:DescribeCapacityProviders," "evidently:GetSegment," "evidently:ListSegments," "grafana:DescribeWorkspace," "grafana:DescribeWorkspaceAuthentication," "grafana:DescribeWorkspaceConfiguration," "grafana:DescribeWorkspaceConfiguration," "guardduty:GetMemberDetectors," "inspector2:BatchGetAccountStatus," "inspector2:GetDelegatedAdminAccount," "inspector2:ListMembers," "iot:DescribeCACertificate," "iot:ListCACertificates," "iot:ListTagsForResource," "iottwinmaker:GetSyncJob," "iottwinmaker:ListSyncJobs," "kafka:ListTagsForResource," "kafkaconnect:DescribeConnector," "kafkaconnect:ListConnectors," "lambda:GetCodeSigningConfig," "lambda:ListCodeSi	This policy now supports additional permissions for AWS Private CA, AWS App Mesh, Amazon Connect, Amazon Elastic Container Service (Amazon ECS), Amazon CloudWatch Evidently, Amazon Managed Grafana, Amazon GuardDuty, Amazon Inspector, AWS IoT, AWS IoT TwinMaker, Amazon Managed Streaming for Apache Kafka (Amazon MSK), AWS Lambda, AWS Network Manager, AWS Organizations, and Amazon SageMaker AI.	October 4, 2023

Change	Description	Date
gningConfigs," "lambda:ListTags," "networkmanager:GetConnectPeer," "organizations:DescribeOrganization," "organizations:ListTargetsForPolicy," "sagemaker:DescribeDataQualityJob," "sagemaker:DescribeModelExplainabilityJob," "sagemaker:ListDataQualityJob," and "sagemaker:ExplainabilityJob"		
AWSConfigServiceRolePolicy – Remove "ssm:GetParameter"	This policy now removes permissions for AWS Systems Manager (Systems Manager).	September 6, 2023

Change	Description	Date
AWS_ConfigRole – Add "appmesh:DescribeGatewayRoute","appstream:DescribeStacks", "aps:ListTagsForResource", "cloudfront:GetFunction", "cloudfront:GetOriginAccessControl", "cloudfront:ListFunctions", "cloudfront:ListOriginAccessControls", "codeartifact:ListPackages", "codeartifact:ListPackageVersions", "codebuild:BatchGetReportGroups", "codebuild:ListReportGroups", "connect:ListInstanceAttributes", "connect:ListInstances", "glue:GetPartition", "glue:GetPartitions", "guardduty:GetAdministratorAccount", "iam:ListInstanceProfileTags", "inspector2:ListFilters", "iot:DescribeJobTemplate", "iot:DescribeProvisioningTemplate", "iot:ListJobTemplates", "iot:ListProvisioningTemplates", "iottwinmaker:GetComponentType", "iottwinmaker:ListComponentTypes", "iotwireless:GetFuotaTask", "iotwireless:GetMulticastGroup", "iotwireless:ListFuotaTasks", "iotwireless:ListMulticastGroups", "kafka:ListScramSe	This policy now supports additional permissions for AWS App Mesh, AWS CloudFormation, Amazon CloudFront AWS CodeArtifact, AWS CodeBuild, Amazon Connect, AWS Glue, Amazon GuardDuty, AWS Identity and Access Management (IAM), Amazon Inspector, AWS IoT, AWS IoT TwinMaker, AWS IoT Wireless, Amazon Managed Streaming for Apache Kafka, Amazon Macie, AWS Elemental MediaConnect, AWS Network Manager, AWS Organizations, AWS Resource Explorer, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), and Amazon Simple Notification Service (Amazon SNS).	July 28, 2023

Change	Description	Date
crets", "macie2:ListTagsForResource", "mediaconnect:ListTagsForResource", "networkmanager:GetConnectPeer", "networkmanager:ListConnectPeers", "organizations:DescribeEffectivePolicy", "organizations:DescribeResourcePolicy", "resource-explorer-2:GetIndex", "resource-explorer-2:ListIndexes", "resource-explorer-2:ListTagsForResource", "route53:ListCidrCollections", "s3:GetMultiRegionAccessPointPolicy", "s3:GetMultiRegionAccessPointPolicyStatus", and "sns:GetDataProtectionPolicy"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "appmesh:DescribeGatewayRoute", "appstream:DescribeStacks", "aps:ListTagsForResource", "cloudfront:GetFunction", "cloudfront:GetOriginAccessControl", "cloudfront:ListFunctions", "cloudfront:ListOriginAccessControls", "codeartifact:ListPackages", "codeartifact:ListPackageVersions", "codebuild:BatchGetReportGroups", "codebuild:ListReportGroups", "connect:ListInstanceAttributes", "connect:ListInstances", "glue:GetPartition", "glue:GetPartitions", "guardduty:GetAdministratorAccount", "iam:ListInstanceProfileTags", "inspector2:ListFilters", "iot:DescribeJobTemplate", "iot:DescribeProvisioningTemplate", "iot:ListJobTemplates", "iot:ListProvisioningTemplates", "iottwinmaker:GetComponentType", "iottwinmaker:ListComponentTypes", "iotwireless:GetFuotaTask", "iotwireless:GetMulticastGroup", "iotwireless:ListFuotaTasks", "iotwireless:ListMulticastGroups", "kafka:ListScramSe	This policy now supports additional permissions for AWS App Mesh, Amazon AppStream 2.0, AWS CloudFormation, Amazon CloudFront, AWS CodeArtifact, AWS CodeBuild, Amazon Connect, AWS Glue, Amazon GuardDuty, AWS Identity and Access Management (IAM), Amazon Inspector, AWS IoT, AWS IoT TwinMaker, AWS IoT Wireless, Amazon Managed Streaming for Apache Kafka, Amazon Macie, AWS Elemental MediaConnect, AWS Network Manager, AWS Organizations, AWS Resource Explorer, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), Amazon Simple Notification Service (Amazon SNS), and Amazon EC2 Systems Manager (SSM).	July 28, 2023

Change	Description	Date
crets", "macie2:ListTagsForResource", "mediaconnect:ListTagsForResource", "networkmanager:GetConnectPeer", "networkmanager:ListConnectPeers", "organizations:DescribeEffectivePolicy", "organizations:DescribeResourcePolicy", "resource-explorer-2:GetIndex", "resource-explorer-2:ListIndexes", "resource-explorer-2:ListTagsForResource", "route53:ListCidrCollections", "s3:GetMultiRegionAccessPointPolicy", "s3:GetMultiRegionAccessPointPolicyStatus", "sns:GetDataProtectionPolicy", "ssm:DescribeParameters", "ssm:GetParameter", and "ssm:ListTagsForResource"		

Change	Description	Date
AWS_ConfigRole – Add "amplify:GetBranch", "amplify:ListBranches", "app-integrations:GetEventIntegration", "app-integrations:ListEventIntegrationAssociations", "app-integrations:ListEventIntegrations", "appmesh:DescribeRoute", "appmesh:ListRoutes", "aps:ListRuleGroupsNamespaces", "athena:GetPreparedStatement", "athena:ListPreparedStatements", "batch:DescribeSchedulingPolicies", "batch:ListSchedulingPolicies", "cloudformation:ListTypes", "cloudtrail:ListTrails", "codeartifact:ListDomains", "codeguru-profiler:DescribeProfilingGroup", "codeguru-profiler:GetNotificationConfiguration", "codeguru-profiler:GetPolicy", "codeguru-profiler:ListProfilingGroups", "ds:DescribeDomainControllers", “dynamodb:DescribeTableReplicaAutoScaling" "dynamodb:DescribeTimeToLive", "ec2:DescribeTrafficMirrorFilters", "evidently:GetLaunch", "evidently:ListLaunches", "forecast:DescribeDa	This policy now supports additional permissions for AWS Amplify, Amazon Connect, AWS App Mesh, Amazon Managed Service for Prometheus, Amazon Athena, AWS Batch, AWS CloudFormation, AWS CloudTrail, AWS CodeArtifact, Amazon CodeGuru, AWS Directory Service, Amazon DynamoDB, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, AWS Organizations, Amazon Forecast, AWS IoT Greengrass, AWS Ground Station, AWS Identity and Access Management (IAM), Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Lightsail, Amazon CloudWatch Logs, AWS Elemental MediaConnect, AWS Elemental MediaTailor, Amazon Pinpoint, Amazon Virtual Private Cloud (Amazon VPC), Amazon Personalize, Amazon QuickSight, AWS Migration Hub Refactor Spaces, Amazon Simple Storage Service (Amazon S3), Amazon SageMaker AI, AWS Transfer Family.	June 13, 2023

Change	Description	Date
tasetGroup", "forecast :ListDatasetGroups", "greeng rass:DescribeComponent", "greengrass:GetComponent", "greengrass:ListComponents", "greengrass:ListComponentVe rsions", "groundstation:GetM issionProfile", "groundstati on:ListMissionProfiles", "iam:ListGroups", "iam:ListR oles", "kafka:DescribeCon figuration", "kafka:Describe ConfigurationRevision", "kafka:ListConfigurations", "lightsail:GetRelationalDat abases" "logs:ListTagsLogG roup", "mediaconnec t:DescribeFlow", "mediacon nect:ListFlows", "mediatailo r:GetPlaybackConfiguration" , "mediatailor:ListPlaybackC onfigurations", "mobiletarge ting:GetApplicationSettings ", "mobiletargeting:GetEmail Template", "mobiletargeting: GetEventStream", "mobileta rgeting:ListTemplates", "networkmanager:GetCus tomerGatewayAssociations", "networkmanager:Get LinkAssociations", "organiza tions:DescribeAccount", "organizations:Describ eOrganizationalUnit", "organizations:ListAccou		

Change	Description	Date
nts", "organizations:ListAccountsForParent", "organizations:ListOrganizationalUnitsForParent", "organizations:ListTagsForResource", "personalize:DescribeDataset", "personalize:DescribeDatasetGroup", "personalize:DescribeSchema", "personalize:DescribeSolution", "personalize:ListDatasetGroups", "personalize:ListDatasetImportJobs", "personalize:ListDatasets", "personalize:ListSchemas", "personalize:ListSolutions", "personalize:ListTagsForResource", "quicksight:ListTemplates", "refactor-spaces:GetEnvironment", "refactor-spaces:GetService", "refactor-spaces:ListApplications", "refactor-spaces:ListEnvironments", "refactor-spaces:ListServices", "s3:GetAccessPointPolicyStatusForObjectLambda", "sagemaker:DescribeDeviceFleet", "sagemaker:DescribeFeatureGroup", "sagemaker:ListDeviceFleets", "sagemaker:ListFeatureGroups", "sagemaker:ListModels", and "transfer:ListTagsForResource"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add "amplify:GetBranch", "amplify:ListBranches", "app-integrations:GetEventIntegration", "app-integrations:ListEventIntegrationAssociations", "app-integrations:ListEventIntegrations", "appmesh:DescribeRoute", "appmesh:ListRoutes", "aps:ListRuleGroupsNamespaces", "athena:GetPreparedStatement", "athena:ListPreparedStatements", "batch:DescribeSchedulingPolicies", "batch:ListSchedulingPolicies", "cloudformation:ListTypes", "cloudtrail:ListTrails", "codeartifact:ListDomains", "codeguru-profiler:DescribeProfilingGroup", "codeguru-profiler:GetNotificationConfiguration", "codeguru-profiler:GetPolicy", "codeguru-profiler:ListProfilingGroups", "ds:DescribeDomainControllers", "dynamodb:DescribeTableReplicaAutoScaling", "dynamodb:DescribeTimeToLive", "ec2:DescribeTrafficMirrorFilters", "evidently:GetLaunch", "evidently:ListLaunches", "forecast:DescribeDatasetGroup", "forecast	This policy now supports additional permissions for AWS Amplify, Amazon Connect, AWS App Mesh, Amazon Managed Service for Prometheus, Amazon Athena, AWS Batch, AWS CloudFormation, AWS CloudTrail, AWS CodeArtifact, Amazon CodeGuru, AWS Directory Service, Amazon DynamoDB, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, AWS Organizations,Amazon Forecast, AWS IoT Greengrass, AWS Ground Station, AWS Identity and Access Management (IAM), Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Lightsail, Amazon CloudWatch Logs, AWS Elemental MediaConnect, AWS Elemental MediaTailor, Amazon Pinpoint, Amazon Virtual Private Cloud (Amazon VPC), Amazon Personalize, Amazon QuickSight, AWS Migration Hub Refactor Spaces, Amazon Simple Storage Service (Amazon S3), Amazon SageMaker AI, AWS Transfer Family.	June 13, 2023

Change	Description	Date
:ListDatasetGroups", "greengrass:DescribeComponent", "greengrass:GetComponent", "greengrass:ListComponents", "greengrass:ListComponentVersions", "groundstation:GetMissionProfile", "groundstation:ListMissionProfiles", "iam:ListGroups", "iam:ListRoles", "kafka:DescribeConfiguration", "kafka:DescribeConfigurationRevision", "kafka:ListConfigurations", "lightsail:GetRelationalDatabases", "logs:ListTagsLogGroup", "mediaconnect:DescribeFlow", "mediaconnect:ListFlows", "mediatailor:GetPlaybackConfiguration", "mediatailor:ListPlaybackConfigurations", "mobiletargeting:GetApplicationSettings", "mobiletargeting:GetEmailTemplate", "mobiletargeting:GetEventStream", "mobiletargeting:ListTemplates", "networkmanager:GetCustomerGatewayAssociations", "networkmanager:GetLinkAssociations", "organizations:DescribeAccount", "organizations:DescribeOrganizationalUnit", "organizations:ListAccounts", "organizations:Lis		

Change	Description	Date
tAccountsForParent", "organizations:ListOrganizationalUnitsForParent", "organizations:ListTagsForResource", "personalize:DescribeDataset", "personalize:DescribeDatasetGroup", "personalize:DescribeSchema", "personalize:DescribeSolution", "personalize:ListDatasetGroups", "personalize:ListDatasetImportJobs", "personalize:ListDatasets", "personalize:ListSchemas", "personalize:ListSolutions", "personalize:ListTagsForResource", "quicksight:ListTemplates", "refactor-spaces:GetEnvironment", "refactor-spaces:GetService", "refactor-spaces:ListApplications", "refactor-spaces:ListEnvironments", "refactor-spaces:ListServices", "s3:GetAccessPointPolicyStatusForObjectLambda", "sagemaker:DescribeDeviceFleet", "sagemaker:DescribeFeatureGroup", "sagemaker:ListDeviceFleets", "sagemaker:ListFeatureGroups", "sagemaker:ListModels", and "transfer:ListTagsForResource"		

Change	Description	Date
AWSConfigServiceRolePolicy – Add amplify:GetApp, amplify:ListApps, appmesh:DescribeVirtualGateway, appmesh:DescribeVirtualNode, appmesh:DescribeVirtualRouter, appmesh:DescribeVirtualService, appmesh:ListMeshes, appmesh:ListTagsForResource, appmesh:ListVirtualGateways, appmesh:ListVirtualNodes, appmesh:ListVirtualRouters, appmesh:ListVirtualServices, apprunner:DescribeVpcConnector, apprunner:ListVpcConnectors, cloudformation:ListTypes, cloudfront:ListResponseHeadersPolicies, codeartifact:ListRepositories, ds:DescribeEventTopics, ds:ListLogSubscriptions, GetInstanceTypesFromInstanceRequirement ec2:GetManagedPrefixListEntries, kendra:DescribeIndex, kendra:ListIndices, kendra:ListTagsForResource, logs:DescribeDestinations, logs:GetDataProtectionPolicy, macie2:DescribeOrganizationConfiguration, macie2:GetAutomatedD	This policy now supports additional permissions for Amazon Managed Workflows for AWS Amplify, AWS App Mesh, AWS App Runner, Amazon CloudFront, AWS CodeArtifact, Amazon Elastic Compute Cloud, Amazon Kendra, Amazon Macie, Amazon Route 53, Amazon SageMaker AI, AWS Transfer Family, Amazon Pinpoint, AWS Migration Hub, AWS Resilience Hub, Amazon CloudWatch, AWS Directory Service, and AWS WAF.	April 13, 2023

Change	Description	Date
iscoveryConfiguration, macie2:GetClassificationExportConfiguration, macie2:GetCustomDataIdentifier, macie2:GetFindingsPublicationConfiguration, macie2:ListCustomDataIdentifiers, mobiletargeting:GetEmailChannel, refactor-spaces:GetEnvironment, refactor-spaces:ListEnvironments, resiliencehub:ListTagsForResource, route53:GetDNSSEC, sagemaker:DescribeDomain, sagemaker:DescribeModelBiasJobDefinition, sagemaker:DescribeModelQualityJobDefinition, sagemaker:DescribePipeline, sagemaker:DescribeProject, sagemaker:ListDomains, sagemaker:ListModelBiasJobDefinitions, sagemaker:ListModelQualityJobDefinitions, sagemaker:ListPipelines, sagemaker:ListProjects, transfer:DescribeAgreement, transfer:DescribeCertificate, transfer:ListAgreements, transfer:ListCertificates, and waf-regional:ListLoggingConfigurations		

Change	Description	Date
AWS_ConfigRole – Add amplify:GetApp, amplify:ListApps, appmesh:DescribeVirtualGateway, appmesh:DescribeVirtualNode, appmesh:DescribeVirtualRouter, appmesh:DescribeVirtualService, appmesh:ListMeshes, appmesh:ListTagsForResource, appmesh:ListVirtualGateways, appmesh:ListVirtualNodes, appmesh:ListVirtualRouters, appmesh:ListVirtualServices, apprunner:DescribeVpcConnector, apprunner:ListVpcConnectors, cloudformation:ListTypes, cloudfront:ListResponseHeadersPolicies, codeartifact:ListRepositories, ds:DescribeEventTopics, ds:ListLogSubscriptions, ec2:GetInstanceTypesFromInstanceRequirement, ec2:GetManagedPrefixListEntries, kendra:DescribeIndex, kendra:ListIndices, kendra:ListTagsForResource, logs:DescribeDestinations, logs:GetDataProtectionPolicy, macie2:DescribeOrganizationConfiguration, macie2:GetAutomatedDiscoveryConfiguration, macie	This policy now supports additional permissions for Amazon Managed Workflows for AWS Amplify, AWS App Mesh, AWS App Runner, Amazon CloudFront, AWS CodeArtifact, Amazon Elastic Compute Cloud, Amazon Kendra, Amazon Macie, Amazon Route 53, Amazon SageMaker AI, AWS Transfer Family, Amazon Pinpoint, AWS Migration Hub, AWS Resilience Hub, Amazon CloudWatch, AWS Directory Service, and AWS WAF.	April 13, 2023

Change	Description	Date
2:GetClassificationExportConfiguration, macie2:GetCustomDataIdentifier, macie2:GetFindingsPublicationConfiguration, macie2:ListCustomDataIdentifiers, mobiletargeting:GetEmailChannel, refactor-spaces:GetEnvironment, refactor-spaces:ListEnvironments, resiliencehub:ListTagsForResource, route53:GetDNSSEC, sagemaker:DescribeDomain, sagemaker:DescribeModelBiasJobDefinition, sagemaker:DescribeModelQualityJobDefinition, sagemaker:DescribePipeline, sagemaker:DescribeProject, sagemaker:ListDomains, sagemaker:ListModelBiasJobDefinitions, sagemaker:ListModelQualityJobDefinitions, sagemaker:ListPipelines, sagemaker:ListProjects, transfer:DescribeAgreement, transfer:DescribeCertificate, transfer:ListAgreements, transfer:ListCertificates, and waf-regional:ListLoggingConfigurations		

Change	Description	Date
AWSConfigServiceRolePolicy – Add appflow:DescribeFlow, appflow:ListFlows, appflow:ListTagsForResource, apprunner:DescribeService, apprunner:ListServices, apprunner:ListTagsForResource, appstream:DescribeApplications, appstream:DescribeFleets, cloudfront:GetResponseHeadersPolicy, cloudwatch:ListTagsForResource, codeartifact:DescribeRepository, codeartifact:GetRepositoryPermissionsPolicy, codeartifact:ListTagsForResource, codecommit:GetRepository, codecommit:GetRepositoryTriggers, codecommit:ListRepositories, codecommit:ListTagsForResource, devicefarm:GetInstanceProfile, devicefarm:ListInstanceProfiles, devicefarm:ListProjects, evidently:GetProject, evidently:ListProjects, evidently:ListTagsForResource, forecast:DescribeDataset, forecast:ListDatasets, forecast:ListTagsForResource, groundstation:GetConfig, groundstation:ListConfigs, groundstation:ListTagsForResource, iam:GetInstanceProfile, iam:	This policy now supports additional permissions for Amazon Managed Workflows for Amazon AppFlow, AWS App Runner, Amazon AppStream 2.0, Amazon CloudFront, Amazon CloudWatch, AWS CodeArtifact, AWS CodeCommit, AWS Device Farm, Amazon CloudWatch Evidently, Amazon Forecast, AWS Ground Station, AWS Identity and Access Management (IAM), AWS IoT, Amazon MemoryDB, Amazon Pinpoint, AWS Network Manager, AWS Panorama, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, and Amazon SageMaker AI.	March 30, 2023

Change	Description	Date
GetSAMLProvider, iam:GetServerCertificate, iam:ListAccessKeys, iam:ListGroups, iam:ListInstanceProfiles, iam:ListMFADevices, iam:ListMFADeviceTags, iam:ListRoles, iam:ListSAMLProviders, iot:DescribeFleetMetric, iot:ListFleetMetrics, memorydb:DescribeUsers, memorydb:ListTags, mobiletargeting:GetApp, mobiletargeting:GetCampaigns, networkmanager:GetDevices, networkmanager:GetLinks, networkmanager:GetSites, panorama:ListNodes, rds:DescribeDBProxyEndpoints, redshift:DescribeScheduledActions, sagemaker:DescribeAppImageConfig, sagemaker:DescribeImage, sagemaker:DescribeImageVersion, sagemaker:ListAppImageConfigs, sagemaker:ListImages, and sagemaker:ListImageVersions		

Change	Description	Date
AWS_ConfigRole – Add appflow:DescribeFlow, appflow:ListFlows, appflow:ListTagsForResource, apprunner:DescribeService, apprunner:ListServices, apprunner:ListTagsForResource, appstream:DescribeApplications, appstream:DescribeFleets, cloudformation:ListTypes, cloudfront:GetResponseHeadersPolicy, cloudfront:ListDistributions, cloudwatch:ListTagsForResource, codeartifact:DescribeRepository, codeartifact:GetRepositoryPermissionsPolicy, codeartifact:ListTagsForResource, codecommit:GetRepository, codecommit:GetRepositoryTriggers, codecommit:ListRepositories, codecommit:ListTagsForResource, devicefarm:GetInstanceProfile, devicefarm:ListInstanceProfiles, devicefarm:ListProjects, ec2:DescribeTrafficMirrorFilters, evidently:GetProject, evidently:ListProjects, evidently:ListTagsForResource, forecast:DescribeDataset, forecast:ListDatasets, forecast:ListTagsForResource, groundstation:GetConfig,	This policy now supports additional permissions for Amazon Managed Workflows for Amazon AppFlow, AWS App Runner, Amazon AppStream 2.0, AWS CloudFormation, Amazon CloudFront, Amazon CloudWatch, AWS CodeArtifact, AWS CodeCommit, AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, Amazon Forecast, AWS Ground Station, AWS Identity and Access Management (IAM), AWS IoT, Amazon MemoryDB, Amazon Pinpoint, AWS Network Manager, AWS Panorama, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, and Amazon SageMaker AI.	March 30, 2023

Change	Description	Date
groundstation:ListConfigs, groundstation:ListTagsForResource, iam:GetInstanceProfile, iam:GetSAMLProvider, iam:GetServerCertificate, iam:ListAccessKeys, iam:ListGroups, iam:ListInstanceProfiles, iam:ListMFADevices, iam:ListMFADeviceTags, iam:ListRoles, iam:ListSAMLProviders, iot:DescribeFleetMetric, iot:ListFleetMetrics, memorydb:DescribeUsers, memorydb:ListTags, mobiletargeting:GetApp, mobiletargeting:GetCampaigns, network manager:GetDevices, networkmanager:GetLinks, networkmanager:GetSites, panorama:ListNodes, rds:DescribeDBProxyEndpoints, redshift:DescribeScheduledActions, sagemaker:DescribeAppImageConfig, sagemaker:DescribeImage, sagemaker:DescribeImageVersion, sagemaker:ListAppImageConfigs, sagemaker:ListImages, and sagemaker:ListImageVersions		

Change	Description	Date
AWSConfigRulesExecutionRole – AWS Config starts tracking changes for this AWS managed policy	This policy allow AWS Lambda functions to access the AWS Config API and the configuration snapshots that AWS Config delivers periodically to Amazon S3. This access is required by functions that evaluate configuration changes for AWS Custom Lambda rules.	March 7, 2023
AWSConfigRoleForOrganizations – AWS Config starts tracking changes for this AWS managed policy	This policy allows AWS Config to call read-only AWS Organizations APIs.	March 7, 2023
AWSConfigRemediationServiceRolePolicy – AWS Config starts tracking changes for this AWS managed policy	This policy allows AWS Config to remediate `NON_COMPLIANT` resources on your behalf.	March 7, 2023
AWSConfigServiceRolePolicy – Add auditmanager:GetAccountStatus	This policy now grants permission to return the registration status of an account in AWS Audit Manager.	March 3, 2023
AWS_ConfigRole – Add auditmanager:GetAccountStatus	This policy now grants permission to return the registration status of an account in AWS Audit Manager.	March 3, 2023

Change	Description	Date
AWSConfigMultiAccountSetupPolicy – AWS Config starts tracking changes for this AWS managed policy	This policy allows AWS Config to call AWS services and deploy AWS Config resources across an organization with AWS Organizations.	February 27, 2023

Change	Description	Date
AWSConfigServiceRolePolicy – Add airflow:ListTagsForResource, iot:ListCustomMetrics, iot:DescribeCustomMetric, appstream:DescribeDirectoryConfigs, appstream:ListTagsForResource, codeguru-reviewer:DescribeRepositoryAssociation, codeguru-reviewer:ListRepositoryAssociations, healthlake:ListFHIRDatastores, healthlake:DescribeFHIRDatastore, healthlake:ListTagsForResource, kinesisvideo:DescribeStream, kinesisvideo:ListStreams, kinesisvideo:ListTagsForStream, kinesisvideo:DescribeSignalingChannel, kinesisvideo:ListTagsForResource, kinesisvideo:ListSignalingChannels, route53-recovery-control-config:DescribeCluster, route53-recovery-control-config:DescribeRoutingControl, route53-recovery-control-config:DescribeSafetyRule, route53-recovery-control-config:ListClusters, route53-recovery-control-config:ListRoutingControls, route53-recovery-control-config:ListSafetyRules, devicefarm:GetTestGridProject, devicefar	This policy now supports additional permissions for Amazon Managed Workflows for Apache Airflow, AWS IoT, Amazon AppStream 2.0, Amazon CodeGuru Reviewer, AWS HealthLake, Amazon Kinesis Video Streams, Amazon Application Recovery Controller (ARC), AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, AWS Identity and Access Management (IAM), Amazon GuardDuty, and Amazon CloudWatch Logs.	February 1, 2023

Change	Description	Date
m:ListTestGridProjects, ec2:DescribeCapacityReservationFleets, ec2:DescribeIpamPools, ec2:DescribeIpams, ec2:GetInstanceTypesFromInstanceRequirement, mobiletargeting:GetApplicationSettings, mobiletargeting:ListTagsForResource, ecr:BatchGetRepositoryScanningConfiguration, iam:ListServerCertificates, guardduty:ListPublishingDestinations, guardduty:DescribePublishingDestination, logs:GetLogDelivery, and logs:ListLogDeliveries		

Change	Description	Date
AWS_ConfigRole – Add airflow:ListTagsForResource, iot:ListCustomMetrics, iot:DescribeCustomMetric, appstream:DescribeDirectoryConfigs, appstream:ListTagsForResource, codeguru-reviewer:DescribeRepositoryAssociation, codeguru-reviewer:ListRepositoryAssociations, healthlake:ListFHIRDatastores, healthlake:DescribeFHIRDatastore, healthlake:ListTagsForResource, kinesisvideo:DescribeStream, kinesisvideo:ListStreams, kinesisvideo:ListTagsForStream, kinesisvideo:DescribeSignalingChannel, kinesisvideo:ListTagsForResource, kinesisvideo:ListSignalingChannels, route53-recovery-control-config:DescribeCluster, route53-recovery-control-config:DescribeRoutingControl, route53-recovery-control-config:DescribeSafetyRule, route53-recovery-control-config:ListClusters, route53-recovery-control-config:ListRoutingControls, route53-recovery-control-config:ListSafetyRules, devicefarm:GetTestGridProject, devicefar	This policy now supports additional permissions for Amazon Managed Workflows for Apache Airflow, AWS IoT, Amazon AppStream 2.0, Amazon CodeGuru Reviewer, AWS HealthLake, Amazon Kinesis Video Streams, Amazon Application Recovery Controller (ARC), AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, AWS Identity and Access Management (IAM), Amazon GuardDuty, and Amazon CloudWatch Logs.	February 1, 2023

Change	Description	Date
m:ListTestGridProjects, ec2:DescribeCapacityReservationFleets, ec2:DescribeIpamPools, ec2:DescribeIpams, ec2:GetInstanceTypesFromInstanceRequirement, mobiletargeting:GetApplicationSettings, mobiletargeting:ListTagsForResource, ecr:BatchGetRepositoryScanningConfiguration, iam:ListServerCertificates, guardduty:ListPublishingDestinations, guardduty:DescribePublishingDestination, logs:GetLogDelivery, and logs:ListLogDeliveries		
ConfigConformsServiceRolePolicy – Update config:DescribeConfigRules	As a security best practice, this policy now removes broad resource-level permission for `config:DescribeConfigRules` .	January 12, 2023

Change	Description	Date
AWSConfigServiceRolePolicy – Add APS:DescribeRuleGroupsNamespace, APS:DescribeWorkspace, APS:ListWorkspaces, auditmanager:GetAssessment, auditmanager:ListAssessments, devicefarm:GetNetworkProfile, AWS Transfer Family devicefarm:GetProject, devicefarm:ListNetworkProfiles, devicefarm:ListTagsForResource, dms:DescribeEndpoints, ds:ListTagsForResource, ec2:DescribeTags, ec2:DescribeTrafficMirrorSessions, ec2:DescribeTrafficMirrorTargets, ec2:GetIpamPoolAllocations, ec2:GetIpamPoolCidrs, glue:GetMLTransform, glue:GetMLTransforms, glue:ListMLTransforms, iot:DescribeScheduledAudit, iot:ListScheduledAudits, ivs:GetChannel, lightsail:GetRelationalDatabases, mediapackage-vod:DescribePackagingConfiguration, mediapackage-vod:ListPackagingConfigurations, networkmanager:DescribeGlobalNetworks, networkmanager:GetTransitGatewayRegistrations,	This policy now supports additional permissions for Amazon Managed Service for Prometheus, AWS Audit Manager, AWS Device Farm, AWS Database Migration Service (AWS DMS), AWS Directory Service, Amazon Elastic Compute Cloud (Amazon EC2), AWS Glue, AWS IoT, Amazon Lightsail, AWS Elemental MediaPackage, AWS Network Manager, Amazon QuickSight, AWS Resource Access Manager, Amazon Application Recovery Controller (ARC), Amazon Simple Storage Service (Amazon S3), and Amazon Timestream.	Decemeber 15, 2022

Change	Description	Date
networkmanager:ListTagsForResource, quicksight:DescribeDashboard, quicksight:DescribeDashboardPermissions, quicksight:DescribeTemplate, quicksight:DescribeTemplatePermissions, quicksight:ListDashboards, quicksight:ListTemplates, ram:ListResources, route53-recovery-control-config:DescribeControlPanel, route53-recovery-control-config:ListControlPanels, route53-recovery-control-config:ListTagsForResource, route53resolver:GetResolverQueryLogConfigAssociation, route53resolver:ListResolverQueryLogConfigAssociations, s3:GetAccessPointForObjectLambda, s3:GetAccessPointPolicyForObjectLambda, s3:GetAccessPointPolicyStatusForObjectLambda, s3:GetMultiRegionAccessPoint, s3:ListAccessPointsForObjectLambda, s3:ListMultiRegionAccessPoints, timestream:DescribeEndpoints, transfer:DescribeConnector, transfer:ListConnectors, and transfer:ListTagsForResource		

Change	Description	Date
AWS_ConfigRole – Add APS:DescribeRuleGroupsNamespace, APS:DescribeWorkspace, APS:ListWorkspaces, auditmanager:GetAssessment, auditmanager:ListAssessments, devicefarm:GetNetworkProfile, devicefarm:GetProject, devicefarm:ListNetworkProfiles, devicefarm:ListTagsForResource, dms:DescribeEndpoints, ds:ListTagsForResource, ec2:DescribeTags, ec2:DescribeTrafficMirrorSessions, ec2:DescribeTrafficMirrorTargets, ec2:GetIpamPoolAllocations, ec2:GetIpamPoolCidrs, glue:GetMLTransform, glue:GetMLTransforms, glue:ListMLTransforms, iot:DescribeScheduledAudit, iot:ListScheduledAudits, ivs:GetChannel, lightsail:GetRelationalDatabases, mediapackage-vod:DescribePackagingConfiguration, mediapackage-vod:ListPackagingConfigurations, networkmanager:DescribeGlobalNetworks, networkmanager:GetTransitGatewayRegistrations, networkmanager:ListTagsForResource, quicksight:D	This policy now supports additional permissions for Amazon Managed Service for Prometheus, AWS Audit Manager, AWS Device Farm, AWS Database Migration Service (AWS DMS), AWS Directory Service, Amazon Elastic Compute Cloud (Amazon EC2), AWS Glue, AWS IoT, Amazon Lightsail, AWS Elemental MediaPackage, AWS Network Manager, Amazon QuickSight, AWS Resource Access Manager, Amazon Application Recovery Controller (ARC), Amazon Simple Storage Service (Amazon S3), and Amazon Timestream.	Decemeber 15, 2022

Change	Description	Date
escribeDashboard, quicksight:DescribeDashboardPermissions, quicksight:DescribeTemplate, quicksight:DescribeTemplatePermissions, quicksight:ListDashboards, quicksight:ListTemplates, ram:ListResources, route53-recovery-control-config:DescribeControlPanel, route53-recovery-control-config:ListControlPanels, route53-recovery-control-config:ListTagsForResource, route53resolver:GetResolverQueryLogConfigAssociation, route53resolver:ListResolverQueryLogConfigAssociations, s3:GetAccessPointForObjectLambda, s3:GetAccessPointPolicyForObjectLambda, s3:GetAccessPointPolicyStatusForObjectLambda, s3:GetMultiRegionAccessPoint, s3:ListAccessPointsForObjectLambda, s3:ListMultiRegionAccessPoints, timestream:DescribeEndpoints, transfer:DescribeConnector, transfer:ListConnectors, and transfer:ListTagsForResource		

Change	Description	Date
AWSConfigServiceRolePolicy – Add cloudformation:ListStackResources and cloudformation:ListStacks	This policy now grants permission to return descriptions of all resources of a specified AWS CloudFormation stack and return the summary information for stacks whose status matches the specified StackStatusFilter.	November 7, 2022
AWS_ConfigRole – Add cloudformation:ListStackResources and cloudformation:ListStacks	This policy now grants permission to return descriptions of all resources of a specified AWS CloudFormation stack and return the summary information for stacks whose status matches the specified StackStatusFilter.	November 7, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add acm-pca:GetCertificateAuthorityCsr, acm-pca:ListCertificateAuthorities, acm-pca:ListTags, airflow:GetEnvironment, airflow:ListEnvironments, amplifyuibuilder:ListThemes, appconfig:ListConfigurationProfiles, appconfig:ListDeployments, appconfig:ListDeploymentStrategies, appconfig:ListEnvironments, appconfig:ListHostedConfigurationVersions, cassandra:Select, cloudwatch:DescribeAnomalyDetectors, cloudwatch:GetDashboard, cloudwatch:ListDashboards, connect:DescribePhoneNumber, connect:ListPhoneNumbers, connect:ListPhoneNumbersV2, connect:SearchAvailablePhoneNumbers, databrew:DescribeDataset, databrew:DescribeJob, databrew:DescribeProject, databrew:DescribeRecipe, databrew:DescribeRuleset, databrew:DescribeSchedule, databrew:ListDatasets, databrew:ListJobs, databrew:ListProjects, databrew:ListRecipes, databrew:ListRecipeVers	This policy now supports additional permissions for AWS Certificate Manager, Amazon Managed Workflows for Apache Airflow, AWS Amplify, AWS AppConfig, Amazon Keyspaces, Amazon CloudWatch, Amazon Connect, AWS Glue DataBrew, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service (Amazon EKS), Amazon EventBridge, AWS Fault Injection Service, Amazon Fraud Detector, Amazon FSx, Amazon GameLift Servers, Amazon Location Service, AWS IoT, Amazon Lex, Amazon Lightsail, Amazon Pinpoint, AWS OpsWorks, AWS Panorama, AWS Resource Access Manager, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, AWS RoboMaker, AWS Resource Groups, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), AWS Cloud Map, and AWS Security Token Service.	October 19, 2022

Change	Description	Date
ions, databrew:ListRulesets, databrew:ListSchedules, ec2:DescribeRouteTables, eks:DescribeAddon, eks:DescribeIdentityProviderConfig, eks:ListAddons, eks:ListIdentityProviderConfigs, events:DescribeConnection, events:ListApiDestinations, events:ListConnections, fis:GetExperimentTemplate, fis:ListExperimentTemplates, frauddetector:GetRules, fsx:DescribeBackups, fsx:DescribeSnapshots, fsx:DescribeStorageVirtualMachines, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeVpcPeeringConnections, geo:ListGeofenceCollections, geo:ListPlaceIndexes, geo:ListRouteCalculators, geo:ListTrackers, iot:DescribeAccountAuditConfiguration, iot:DescribeAuthorizer, iot:DescribeDomainConfiguration, iot:DescribeMitigationAction, iot:ListAuthorizers, iot:ListDomainConfigurations, iot:ListMitigationActions, iotsitewise:DescribeAssetModel, iotsitewise:DescribeDashboard, iotsitewise:DescribeGateway, iotsitewise:DescribePortal, iotsitewise:DescribeProject,		

Change	Description	Date
iotsitewise:ListAssetModels, iotsitewise:ListDashboards, iotsitewise:ListGateways, iotsitewise:ListPortals, io tsitewise:ListProjectAssets , iotsitewise:ListProjects, i otsitewise:ListTagsForResou rce, iotwireless:GetSer viceProfile, iotwireless:Ge tWirelessDevice, iotwireles s:GetWirelessGatewayTaskDef inition, iotwireless:ListSe rviceProfiles, iotwireless: ListTagsForResource, iotwir eless:ListWirelessDevices, iotwireless:ListWirelessGat ewayTaskDefinitions, lex:De scribeBotVersion, lex:ListB otVersions, lightsail:GetCo ntainerServices, lightsail :GetDistributions, lightsai l:GetRelationalDatabase, li ghtsail:GetRelationalDataba seParameters, mobiletargeti ng:GetApps, mobiletar geting:GetCampaign, mobiletargeting:GetSegmen t, mobiletargeting:Ge tSegments, opsworks:Describ eInstances, opsworks:Descri beTimeBasedAutoScaling, opsworks:DescribeVolumes, panorama:DescribeAp plicationInstance, panorama :DescribeApplicationInstanc		

Change	Description	Date
eDetails, panorama:DescribePackage, panorama:DescribePackageVersion, panorama:ListApplicationInstances, panorama:ListPackages, quicksight:ListDataSources, ram:ListResourceSharePermissions, rds:DescribeDBProxies, rds:DescribeGlobalClusters, rekognition:ListStreamProcessors, resource-groups:GetGroup, resource-groups:GetGroupConfiguration, resource-groups:GetGroupQuery, resource-groups:GetTags, resource-groups:ListGroupResources, resource-groups:ListGroups, robomaker:ListRobotApplications, robomaker:ListSimulationApplications, route53resolver:GetResolverDnssecConfig, route53resolver:ListResolverDnssecConfigs, s3:ListStorageLensConfigurations, schemas:GetResourcePolicy, servicediscovery:ListInstances, sts:GetCallerIdentity, synthetics:GetGroup, synthetics:ListAssociatedGroups, synthetics:ListGroupResources, and synthetics:ListGroups		

Change	Description	Date
AWS_ConfigRole – Add acm-pca:GetCertificateAuthorityCsr, acm-pca:ListCertificateAuthorities, acm-pca:ListTags, airflow:GetEnvironment, airflow:ListEnvironments, amplifyuibuilder:ListThemes, appconfig:ListConfigurationProfiles, appconfig:ListDeployments, appconfig:ListDeploymentStrategies, appconfig:ListEnvironments, appconfig:ListHostedConfigurationVersions, cassandra:Select, cloudwatch:DescribeAnomalyDetectors, cloudwatch:GetDashboard, cloudwatch:ListDashboards, connect:DescribePhoneNumber, connect:ListPhoneNumbers, connect:ListPhoneNumbersV2, connect:SearchAvailablePhoneNumbers, databrew:DescribeDataset, databrew:DescribeJob, databrew:DescribeProject, databrew:DescribeRecipe, databrew:DescribeRuleset, databrew:DescribeSchedule, databrew:ListDatasets, databrew:ListJobs, databrew:ListProjects, databrew:ListRecipes, databrew:ListRecipeVers	This policy now supports additional permissions for AWS Certificate Manager, Amazon Managed Workflows for Apache Airflow, AWS Amplify, AWS AppConfig, Amazon Keyspaces, Amazon CloudWatch, Amazon Connect, AWS Glue DataBrew, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service (Amazon EKS), Amazon EventBridge, AWS Fault Injection Service, Amazon Fraud Detector, Amazon FSx, Amazon GameLift Servers, Amazon Location Service, AWS IoT, Amazon Lex, Amazon Lightsail, Amazon Pinpoint, AWS OpsWorks, AWS Panorama, AWS Resource Access Manager, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, AWS RoboMaker, AWS Resource Groups, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), AWS Cloud Map, and AWS Security Token Service.	October 19, 2022

Change	Description	Date
ions, databrew:ListRulesets, databrew:ListSchedules, ec2:DescribeRouteTables, eks:DescribeAddon, eks:DescribeIdentityProviderConfig, eks:ListAddons, eks:ListIdentityProviderConfigs, events:DescribeConnection, events:ListApiDestinations, events:ListConnections, fis:GetExperimentTemplate, fis:ListExperimentTemplates, frauddetector:GetRules, fsx:DescribeBackups, fsx:DescribeSnapshots, fsx:DescribeStorageVirtualMachines, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeVpcPeeringConnections, geo:ListGeofenceCollections, geo:ListPlaceIndexes, geo:ListRouteCalculators, geo:ListTrackers, iot:DescribeAccountAuditConfiguration, iot:DescribeAuthorizer, iot:DescribeDomainConfiguration, iot:DescribeMitigationAction, iot:ListAuthorizers, iot:ListDomainConfigurations, iot:ListMitigationActions, iotsitewise:DescribeAssetModel, iotsitewise:DescribeDashboard, iotsitewise:DescribeGateway, iotsitewise:DescribePortal, iotsitewise:DescribeProject,		

Change	Description	Date
iotsitewise:ListAssetModels, iotsitewise:ListDashboards, iotsitewise:ListGateways, iotsitewise:ListPortals, iotsitewise:ListProjectAssets, iotsitewise:ListProjects, iotsitewise:ListTagsForResource, iotwireless:GetServiceProfile, iotwireless:GetWirelessDevice, iotwireless:GetWirelessGatewayTaskDefinition, iotwireless:ListServiceProfiles, iotwireless:ListTagsForResource, iotwireless:ListWirelessDevices, iotwireless:ListWirelessGatewayTaskDefinitions, lex:DescribeBotVersion, lex:ListBotVersions, lightsail:GetContainerServices, lightsail:GetDistributions, lightsail:GetRelationalDatabase, lightsail:GetRelationalDatabaseParameters, mobiletargeting:GetApps, mobiletargeting:GetCampaign, mobiletargeting:GetSegment, mobiletargeting:GetSegments, opsworks:DescribeInstances, opsworks:DescribeTimeBasedAutoScaling, opsworks:DescribeVolumes, panorama:DescribeApplicationInstance, panorama:DescribeApplicationInstanc		

Change	Description	Date
eDetails, panorama:DescribePackage, panorama:DescribePackageVersion, panorama:ListApplicationInstances, panorama:ListPackages, quicksight:ListDataSources, ram:ListResourceSharePermissions, rds:DescribeDBProxies, rds:DescribeGlobalClusters, rekognition:ListStreamProcessors, resource-groups:GetGroup, resource-groups:GetGroupConfiguration, resource-groups:GetGroupQuery, resource-groups:GetTags, resource-groups:ListGroupResources, resource-groups:ListGroups, robomaker:ListRobotApplications, robomaker:ListSimulationApplications, route53resolver:GetResolverDnssecConfig, route53resolver:ListResolverDnssecConfigs, s3:ListStorageLensConfigurations, schemas:GetResourcePolicy, servicediscovery:ListInstances, sts:GetCallerIdentity, synthetics:GetGroup, synthetics:ListAssociatedGroups, synthetics:ListGroupResources, and synthetics:ListGroups		

Change	Description	Date
AWSConfigServiceRolePolicy – Add Glue::GetTable	This policy now grants permission to retrieve the AWS Glue Table definition in a Data Catalog for a specified table.	September 14, 2022
AWS_ConfigRole – Add Glue::GetTable	This policy now grants permission to retrieve the AWS Glue Table definition in a Data Catalog for a specified table.	September 14, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add appconfig:ListApplications, appflow:DescribeConnectorProfiles, appsync:GetApiCache, autoscaling-plans:DescribeScalingPlanResources, autoscaling-plans:DescribeScalingPlans, autoscaling-plans:GetScalingPlanResourceForecastData, autoscaling:DescribeWarmPool, backup:DescribeFramework, backup:DescribeReportPlan, backup:ListFrameworks, backup:ListReportPlans, budgets:DescribeBudgetAction, budgets:DescribeBudgetActionsForAccount, budgets:DescribeBudgetActionsForBudget, budgets:ViewBudget, ce:GetAnomalyMonitors, ce:GetAnomalySubscriptions, cloud9:DescribeEnvironmentMemberships, cloud9:DescribeEnvironments, cloud9:ListEnvironments, cloud9:ListTagsForResource, cloudwatch:GetMetricStream, cloudwatch:ListMetricStreams, datasync:DescribeLocationFsxWindows, devops-guru:GetResourceCollection, ds:DescribeDirectories, ec2:DescribeTrafficMirrorFilte	This policy now supports additional permissions for Amazon AppFlow, Amazon CloudWatch, Amazon CloudWatch RUM, Amazon CloudWatch Synthetics, Amazon Connect Customer Profiles, Amazon Connect Voice ID, Amazon DevOps Guru, Amazon Elastic Compute Cloud (Amazon EC2), Amazon EC2 Auto Scaling, Amazon EMR, Amazon EventBridge, Amazon EventBridge Schemas, Amazon FinSpace, Amazon Fraud Detector, Amazon GameLift Servers, Amazon Interactive Video Service (Amazon IVS), Amazon Managed Service for Apache Flink, EC2 Image Builder, Amazon Lex, Amazon Lightsail, Amazon Location Service, Amazon Lookout for Equipment, Amazon Lookout for Metrics, Amazon Lookout for Vision, Amazon Managed Blockchain, Amazon MQ, Amazon Nimble StudioAmazon Pinpoint, Amazon QuickSight, Amazon Application Recovery Controller (ARC), Amazon Route 53 Resolver, Amazon Simple Storage	September 7, 2022

Change	Description	Date
rs, ec2:DescribeTrafficMirrorTargets, ec2:GetNetworkInsightsAccessScopeAnalysisFindings, ec2:GetNetworkInsightsAccessScopeContent, elasticmapreduce:DescribeStudio, elasticmapreduce:GetStudioSessionMapping, elasticmapreduce:ListStudios, elasticmapreduce:ListStudioSessionMappings, events:DescribeEndpoint, events:DescribeEventBus, events:DescribeRule, events:ListArchives, events:ListEndpoints, events:ListEventBuses, events:ListRules, events:ListTagsForResource, events:ListTargetsByRule, finspace:GetEnvironment, finspace:ListEnvironments, frauddetector:GetDetectors, frauddetector:GetDetectorVersion, frauddetector:GetEntityTypes, frauddetector:GetEventTypes, frauddetector:GetExternalModels, frauddetector:GetLabels, frauddetector:GetModels, frauddetector:GetOutcomes, frauddetector:GetVariables, frauddetector:ListTagsForResource, gamelift:DescribeAlias, gamelift:DescribeBuild, gamelift:DescribeFleetAttributes, gamelift:Descr	Service (Amazon S3), Amazon SimpleDB, Amazon Simple Email Service (Amazon SES), Amazon Timestream, AWS AppConfig, AWS AppSync, AWS Auto Scaling, AWS Backup, AWS Budgets, AWS Cost Explorer, AWS Cloud9, AWS Directory Service, AWS DataSync, AWS Elemental MediaPackage, AWS Glue, AWS IoT, AWS IoT Analytics, AWS IoT Events, AWS IoT SiteWise, AWS IoT TwinMaker, AWS Lake Formation, AWS License Manager, AWS Resilience Hub, AWS Signer, and AWS Transfer Family.	

Change	Description	Date
ibeFleetCapacity, gamelift: DescribeFleetLocationAttributes, gamelift:DescribeFleetLocationCapacity, gamelift:DescribeFleetPortSettings, gamelift:DescribeGameServerGroup, gamelift:DescribeGameSessionQueues, gamelift:DescribeMatchmakingConfigurations, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeRuntimeConfiguration, gamelift:DescribeScript, gamelift:DescribeVpcPeeringAuthorizations, gamelift:ListAliases, gamelift:ListBuilds, gamelift: ListFleets, gamelift:ListGameServerGroups, gamelift: ListScripts, gamelift:ListTagsForResource, geo:ListMaps, glue:GetClassifier, glue:GetClassifiers, imagebuilder:GetContainerRecipe, imagebuilder:GetImage, imagebuilder:GetImagePipeline, imagebuilder:GetImageRecipe, imagebuilder:ListContainerRecipes, imagebuilder:ListImageBuildVersions, imagebuilder:ListImagePipelines, imagebuilder:ListImageRecipes, imagebuilder:ListImages, iot:DescribeCertificate, iot:DescribeDimensio		

Change	Description	Date
n, iot:DescribeRoleAlias, iot:DescribeSecurityProfile, iot:GetPolicy, iot:GetTopicRule, iot:GetTopicRuleDestination, iot:ListCertificates, iot:ListDimensions, iot:ListPolicies, iot:ListRoleAliases, iot:ListSecurityProfiles, iot:ListSecurityProfilesForTarget, iot:ListTagsForResource, iot:ListTargetsForSecurityProfile, iot:ListTopicRuleDestinations, iot:ListTopicRules, iot:ListV2LoggingLevels, iot:ValidateSecurityProfileBehaviors, iotanalytics:DescribeChannel, iotanalytics:DescribeDataset, iotanalytics:DescribeDatastore, iotanalytics:DescribePipeline, iotanalytics:ListChannels, iotanalytics:ListDatasets, iotanalytics:ListDatastores, iotanalytics:ListPipelines, iotanalytics:ListTagsForResource, iotevents:DescribeAlarmModel, iotevents:DescribeDetectorModel, iotevents:DescribeInput, iotevents:ListAlarmModels, iotevents:ListDetectorModels, iotevents:ListInputs, iotevents:ListTagsForResource, iotsitewise:DescribeAccessPolicy, iotsitewise:Descri		

Change	Description	Date
beAsset, iotsitewise:ListAccessPolicies, iotsitewise:ListAssets, iottwinmaker:GetEntity, iottwinmaker:GetScene, iottwinmaker:GetWorkspace, iottwinmaker:ListEntities, iottwinmaker:ListScenes, iottwinmaker:ListTagsForResource, iottwinmaker:ListWorkspaces, ivs:GetPlaybackKeyPair, ivs:GetRecordingConfiguration, ivs:GetStreamKey, ivs:ListChannels, ivs:ListPlaybackKeyPairs, ivs:ListRecordingConfigurations, ivs:ListStreamKeys, ivs:ListTagsForResource, kinesisanalytics:ListApplications, lakeformation:DescribeResource, lakeformation:GetDataLakeSettings, lakeformation:ListPermissions, lakeformation:ListResources, lex:DescribeBot, lex:DescribeBotAlias, lex:DescribeResourcePolicy, lex:ListBotAliases, lex:ListBotLocales, lex:ListBots, lex:ListTagsForResource, license-manager:GetGrant, license-manager:GetLicense, license-manager:ListDistributedGrants, license-manager:ListLicenses, license-manager:ListReceivedGrants, lightsail:GetAlarm		

Change	Description	Date
s, lightsail:GetBuckets, lightsail:GetCertificates, lightsail:GetDisk, lightsail :GetDisks, lightsail:GetInsta nce, lightsail:GetInstances , lightsail:GetKeyPair, light sail:GetLoadBalancer, lightsail :GetLoadBalancers, lightsai l:GetLoadBalancerTlsCertifi cates, lightsail:GetStati cIp, lightsail:GetStaticIps, lookoutequipment:Describe InferenceScheduler, lookout equipment:ListTagsForResour ce, lookoutmetrics:Describe Alert, lookoutmetrics:Descr ibeAnomalyDetector, lookoutmetrics:ListAlerts, lookoutmetrics:ListAnomalyD etectors, lookoutmetrics:Li stMetricSets, lookoutmetric s:ListTagsForResource, lookoutvision:Describe Project, lookoutvision:List Projects, managedblockchain :GetMember, managedbl ockchain:GetNetwork, managedblockchain:GetNode, managedblockchain:ListInvit ations, managedblockchain:L istMembers, managedbl ockchain:ListNodes, mediapa ckage-vod:DescribePackaging Group, mediapackage- vod:ListPackagingGroups,		

Change	Description	Date
mediapackage-vod:ListTagsForResource, mobiletargeting:GetInAppTemplate, mobiletargeting:ListTemplates, mq:DescribeBroker, mq:ListBrokers, nimble:GetLaunchProfile, nimble:GetLaunchProfileDetails, nimble:GetStreamingImage, nimble:GetStudio, nimble:GetStudioComponent, nimble:ListLaunchProfiles, nimble:ListStreamingImages, nimble:ListStudioComponents, nimble:ListStudios, profile:GetDomain, profile:GetIntegration, profile:GetProfileObjectType, profile:ListDomains, profile:ListIntegrations, profile:ListProfileObjectTypes, profile:ListTagsForResource, quicksight:DescribeAnalysis, quicksight:DescribeAnalysisPermissions, quicksight:DescribeDataSet, quicksight:DescribeDataSetPermissions, quicksight:DescribeTheme, quicksight:DescribeThemePermissions, quicksight:ListAnalyses, quicksight:ListDataSets, quicksight:ListThemes, resiliencehub:DescribeApp, resiliencehub:DescribeAppVersionTemplate, resiliencehub:De		

Change	Description	Date
scribeResiliencyPolicy, resiliencehub:ListApps, resiliencehub:ListAppVersionResourceMappings, resiliencehub:ListResiliencyPolicies, route53-recovery-readiness:GetCell, route53-recovery-readiness:GetReadinessCheck, route53-recovery-readiness:GetRecoveryGroup, route53-recovery-readiness:GetResourceSet, route53-recovery-readiness:ListCells, route53-recovery-readiness:ListReadinessChecks, route53-recovery-readiness:ListRecoveryGroups, route53-recovery-readiness:ListResourceSets, route53resolver:GetFirewallDomainList, route53resolver:GetFirewallRuleGroup, route53resolver:GetFirewallRuleGroupAssociation, route53resolver:GetResolverQueryLogConfig, route53resolver:ListFirewallDomainLists, route53resolver:ListFirewallDomains, route53resolver:ListFirewallRuleGroupAssociations, route53resolver:ListFirewallRuleGroups, route53resolver:ListFirewallRules, route53resolver:ListResolverQueryLogConfigs, rum:GetAppMonitor,		

Change	Description	Date
rum:GetAppMonitorData, rum:ListAppMonitors, rum:ListTagsForResource, s3-outposts:GetAccessPoint, s3-outposts:GetAccessPointPolicy, s3-outposts:GetBucket, s3-outposts:GetBucketPolicy, s3-outposts:GetBucketTagging, s3-outposts:GetLifecycleConfiguration, s3-outposts:ListAccessPoints, s3-outposts:ListEndpoints, s3-outposts:ListRegionalBuckets, schemas:DescribeDiscoverer, schemas:DescribeRegistry, schemas:DescribeSchema, schemas:ListDiscoverers, schemas:ListRegistries, schemas:ListSchemas, sdb:GetAttributes, sdb:ListDomains, ses:ListEmailTemplates, ses:ListReceiptFilters, ses:ListReceiptRuleSets, ses:ListTemplates, signer:GetSigningProfile, signer:ListProfilePermissions, signer:ListSigningProfiles, synthetics:DescribeCanaries, synthetics:DescribeCanariesLastRun, synthetics:DescribeRuntimeVersions, synthetics:GetCanary, synthetics:GetCanaryRuns, synthetics:ListTagsForResource, timestream:DescribeDatabase, timestream:Describ		

Change	Description	Date
eTable, timestream:ListDatabases, timestream:ListTables, timestream:ListTagsForResource, transfer:DescribeServer, transfer:DescribeUser, transfer:DescribeWorkflow, transfer:ListServers, transfer:ListUsers, transfer:ListWorkflows, voiceid:DescribeDomain, and voiceid:ListTagsForResource		

Change	Description	Date
AWS_ConfigRole – Add appconfig:ListApplications, appflow:DescribeConnectorProfiles, appsync:GetApiCache, autoscaling-plans:DescribeScalingPlanResources, autoscaling-plans:DescribeScalingPlans, autoscaling-plans:GetScalingPlanResourceForecastData, autoscaling:DescribeWarmPool, backup:DescribeFramework, backup:DescribeReportPlan, backup:ListFrameworks, backup:ListReportPlans, budgets:DescribeBudgetAction, budgets:DescribeBudgetActionsForAccount, budgets:DescribeBudgetActionsForBudget, budgets:ViewBudget, ce:GetAnomalyMonitors, ce:GetAnomalySubscriptions, cloud9:DescribeEnvironmentMemberships, cloud9:DescribeEnvironments, cloud9:ListEnvironments, cloud9:ListTagsForResource, cloudwatch:GetMetricStream, cloudwatch:ListMetricStreams, datasync:DescribeLocationFsxWindows, devops-guru:GetResourceCollection, ds:DescribeDirectories, ec2:DescribeTrafficMirrorTargets, ec2:G	This policy now supports additional permissions for Amazon AppFlow, Amazon CloudWatch, Amazon CloudWatch RUM, Amazon CloudWatch Synthetics, Amazon Connect Customer Profiles, Amazon Connect Voice ID, Amazon DevOps Guru, Amazon Elastic Compute Cloud (Amazon EC2), Amazon EC2 Auto Scaling, Amazon EMR, Amazon EventBridge, Amazon EventBridge Schemas, Amazon FinSpace, Amazon Fraud Detector, Amazon GameLift Servers, Amazon Interactive Video Service (Amazon IVS), Amazon Managed Service for Apache Flink, EC2 Image Builder, Amazon Lex, Amazon Lightsail, Amazon Location Service, Amazon Lookout for Equipment, Amazon Lookout for Metrics, Amazon Lookout for Vision, Amazon Managed Blockchain, Amazon MQ, Amazon Nimble StudioAmazon Pinpoint, Amazon QuickSight, Amazon Application Recovery Controller (ARC), Amazon Route 53 Resolver, Amazon Simple Storage	September 7, 2022

Change	Description	Date
etNetworkInsightsAccessScopeAnalysisFindings, ec2:GetNetworkInsightsAccessScopeContent, elasticmapreduce:DescribeStudio, elasticmapreduce:GetStudioSessionMapping, elasticmapreduce:ListStudios, elasticmapreduce:ListStudioSessionMappings, events:DescribeEndpoint, events:DescribeEventBus, events:DescribeRule, events:ListArchives, events:ListEndpoints, events:ListEventBuses, events:ListRules, events:ListTagsForResource, events:ListTargetsByRule, finspace:GetEnvironment, finspace:ListEnvironments, frauddetector:GetDetectors, frauddetector:GetDetectorVersion, frauddetector:GetEntityTypes, frauddetector:GetEventTypes, frauddetector:GetExternalModels, frauddetector:GetLabels, frauddetector:GetModels, frauddetector:GetOutcomes, frauddetector:GetVariables, frauddetector:ListTagsForResource, gamelift:DescribeAlias, gamelift:DescribeBuild, gamelift:DescribeFleetAttributes, gamelift:DescribeFleetCapacity, gamelift:DescribeFleetLocationAttrib	Service (Amazon S3), Amazon SimpleDB, Amazon Simple Email Service (Amazon SES), Amazon Timestream, AWS AppConfig, AWS AppSync, AWS Auto Scaling, AWS Backup, AWS Budgets, AWS Cost Explorer, AWS Cloud9, AWS Directory Service, AWS DataSync, AWS Elemental MediaPackage, AWS Glue, AWS IoT, AWS IoT Analytics, AWS IoT Events, AWS IoT SiteWise, AWS IoT TwinMaker, AWS Lake Formation, AWS License Manager, AWS Resilience Hub, AWS Signer, and AWS Transfer Family	

Change	Description	Date
utes, gamelift:DescribeFleetLocationCapacity, gamelift:DescribeFleetPortSettings, gamelift:DescribeGameServerGroup, gamelift:DescribeGameSessionQueues, gamelift:DescribeMatchmakingConfigurations, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeRuntimeConfiguration, gamelift:DescribeScript, gamelift:DescribeVpcPeeringAuthorizations, gamelift:ListAliases, gamelift:ListBuilds, gamelift:ListFleets, gamelift:ListGameServerGroups, gamelift:ListScripts, gamelift:ListTagsForResource, geo:ListMaps, glue:GetClassifier, glue:GetClassifiers, imagebuilder:GetContainerRecipe, imagebuilder:GetImage, imagebuilder:GetImagePipeline, imagebuilder:GetImageRecipe, imagebuilder:ListContainerRecipes, imagebuilder:ListImageBuildVersions, imagebuilder:ListImagePipelines, imagebuilder:ListImageRecipes, imagebuilder:ListImages, iot:DescribeCertificate, iot:DescribeDimension, iot:DescribeRoleAlias, iot:DescribeSecurityProfile,		

Change	Description	Date
iot:GetPolicy, iot:GetTopicRule, iot:GetTopicRuleDestination, iot:ListCertificates, iot:ListDimensions, iot:ListPolicies, iot:ListRoleAliases, iot:ListSecurityProfiles, iot:ListSecurityProfilesForTarget, iot:ListTagsForResource, iot:ListTargetsForSecurityProfile, iot:ListTopicRuleDestinations, iot:ListTopicRules, iot:ListV2LoggingLevels, iot:ValidateSecurityProfileBehaviors, iotanalytics:DescribeChannel, iotanalytics:DescribeDataset, iotanalytics:DescribeDatastore, iotanalytics:DescribePipeline, iotanalytics:ListChannels, iotanalytics:ListDatasets, iotanalytics:ListDatastores, iotanalytics:ListPipelines, iotanalytics:ListTagsForResource, iotevents:DescribeAlarmModel, iotevents:DescribeDetectorModel, iotevents:DescribeInput, iotevents:ListAlarmModels, iotevents:ListDetectorModels, iotevents:ListInputs, iotevents:ListTagsForResource, iotsitewise:DescribeAccessPolicy, iotsitewise:DescribeAsset, iotsitewise:ListAccessPolicies, iotsitewise:ListAs		

Change	Description	Date
sets, iottwinmaker:GetEntity, iottwinmaker:GetScene, iottwinmaker:GetWorkspace, iottwinmaker:ListEntities, iottwinmaker:ListScenes, iottwinmaker:ListTagsForResource, iottwinmaker:ListWorkspaces, ivs:GetPlaybackKeyPair, ivs:GetRecordingConfiguration, ivs:GetStreamKey, ivs:ListChannels, ivs:ListPlaybackKeyPairs, ivs:ListRecordingConfigurations, ivs:ListStreamKeys, ivs:ListTagsForResource, kinesisanalytics:ListApplications, lakeformation:DescribeResource, lakeformation:GetDataLakeSettings, lakeformation:ListPermissions, lakeformation:ListResources, lex:DescribeBot, lex:DescribeBotAlias, lex:DescribeResourcePolicy, lex:ListBotAliases, lex:ListBotLocales, lex:ListBots, lex:ListTagsForResource, license-manager:GetGrant, license-manager:GetLicense, license-manager:ListDistributedGrants, license-manager:ListLicenses, license-manager:ListReceivedGrants, lightsail:GetAlarms, lightsail:GetBuckets, lightsail:GetCertificates,		

Change	Description	Date
lightsail:GetDisk, lightsail:GetDisks, lightsail:GetInstance, lightsail:GetInstances, lightsail:GetKeyPair, lightsail:GetLoadBalancer, lightsail:GetLoadBalancers, lightsail:GetLoadBalancerTlsCertificates, lightsail:GetStaticIp, lightsail:GetStaticIps, lookoutequipment:DescribeInferenceScheduler, lookoutequipment:ListTagsForResource, lookoutmetrics:DescribeAlert, lookoutmetrics:DescribeAnomalyDetector, lookoutmetrics:ListAlerts, lookoutmetrics:ListAnomalyDetectors, lookoutmetrics:ListMetricSets, lookoutmetrics:ListTagsForResource, lookoutvision:DescribeProject, lookoutvision:ListProjects, managedblockchain:GetMember, managedblockchain:GetNetwork, managedblockchain:GetNode, managedblockchain:ListInvitations, managedblockchain:ListMembers, managedblockchain:ListNodes, mediapackage-vod:DescribePackagingGroup, mediapackage-vod:ListPackagingGroups, mediapackage-vod:ListTagsForResource, mobilet		

Change	Description	Date
argeting:GetInAppTemplate, mobiletargeting:ListTemplates, mq:DescribeBroker, mq:ListBrokers, nimble:GetLaunchProfile, nimble:GetLaunchProfileDetails, nimble:GetStreamingImage, nimble:GetStudio, nimble:GetStudioComponent, nimble:ListLaunchProfiles, nimble:ListStreamingImages, nimble:ListStudioComponents, nimble:ListStudios, profile:GetDomain, profile:GetIntegration, profile:GetProfileObjectType, profile:ListDomains, profile:ListIntegrations, profile:ListProfileObjectTypes, profile:ListTagsForResource, quicksight:DescribeAnalysis, quicksight:DescribeAnalysisPermissions, quicksight:DescribeDataSet, quicksight:DescribeDataSetPermissions, quicksight:DescribeTheme, quicksight:DescribeThemePermissions, quicksight:ListAnalyses, quicksight:ListDataSets, quicksight:ListThemes, resiliencehub:DescribeApp, resiliencehub:DescribeAppVersionTemplate, resiliencehub:DescribeResiliencyPolicy, resiliencehub:ListApps, res		

Change	Description	Date
iliencehub:ListAppVersionResourceMappings, resilienceh ub:ListResiliencyPolicies, route53-recovery-readiness: GetCell, route53-recovery-r eadiness:GetReadinessCheck, route53-recovery-readiness :GetRecoveryGroup, route53-recovery-readiness:GetResou rceSet, route53-recovery-re adiness:ListCells, route53-recovery-readiness:ListRead inessChecks, route53-recove ry-readiness:ListRecoveryGr oups, route53-recovery-readiness:ListResource Sets, route53resolver:GetFi rewallDomainList, route53re solver:GetFirewallRuleGroup , route53resolver:GetFirewa llRuleGroupAssociation, route53resolver:GetRe solverQueryLogConfig, route 53resolver:ListFirewallDoma inLists, route53resolver:Li stFirewallDomains, route53r esolver:ListFirewallRuleGro upAssociations, route53reso lver:ListFirewallRuleGroups , route53resolver:ListFirew allRules, route53resolver:L istResolverQueryLogConfigs, rum:GetAppMonitor, rum:GetAppMonitorData, rum:ListAppMonitors, rum:Li		

Change	Description	Date
stTagsForResource, s3-outposts:GetAccessPoint, s3-outposts:GetAccessPointPolicy, s3-outposts:GetBucket, s3-outposts:GetBucketPolicy, s3-outposts:GetBucketTagging, s3-outposts:GetLifecycleConfiguration, s3-outposts:ListAccessPoints, s3-outposts:ListEndpoints, s3-outposts:ListRegionalBuckets, schemas:DescribeDiscoverer, schemas:DescribeRegistry, schemas:DescribeSchema, schemas:ListDiscoverers, schemas:ListRegistries, schemas:ListSchemas, sdb:GetAttributes, sdb:ListDomains, ses:ListEmailTemplates, ses:ListReceiptFilters, ses:ListReceiptRuleSets, ses:ListTemplates, signer:GetSigningProfile, signer:ListProfilePermissions, signer:ListSigningProfiles, synthetics:DescribeCanaries, synthetics:DescribeCanariesLastRun, synthetics:DescribeRuntimeVersions, synthetics:GetCanary, synthetics:GetCanaryRuns, synthetics:ListTagsForResource, timestream:DescribeDatabase, timestream:DescribeTable, timestream:ListDatabases, timestream:ListTab		

Change	Description	Date
les, timestream:ListTagsFor Resource, transfer:DescribeS erver, transfer:DescribeUser, transfer:DescribeWorkflow, transfer:ListServers, transfer: ListUsers, transfer:ListWor kflows, voiceid:DescribeDo main, and voiceid:ListTa gsForResource		

Change	Description	Date
AWSConfigServiceRolePolicy – Add airflow:ListTagsForResource, iot:ListCustomMetrics, iot:DescribeCustomMetric, appstream:DescribeDirectoryConfigs, appstream:ListTagsForResource, codeguru-reviewer:DescribeRepositoryAssociation, codeguru-reviewer:ListRepositoryAssociations, healthlake:ListFHIRDatastores, healthlake:DescribeFHIRDatastore, healthlake:ListTagsForResource, kinesisvideo:DescribeStream, kinesisvideo:ListStreams, kinesisvideo:ListTagsForStream, kinesisvideo:DescribeSignalingChannel, kinesisvideo:ListTagsForResource, kinesisvideo:ListSignalingChannels, route53-recovery-control-config:DescribeCluster, route53-recovery-control-config:DescribeRoutingControl, route53-recovery-control-config:DescribeSafetyRule, route53-recovery-control-config:ListClusters, route53-recovery-control-config:ListRoutingControls, route53-recovery-control-config:ListSafetyRules, devicefarm:GetTestGridProject, devicefar	This policy now supports additional permissions for Amazon Managed Workflows for Apache Airflow, AWS IoT, Amazon AppStream 2.0, Amazon CodeGuru Reviewer, AWS HealthLake, Amazon Kinesis Video Streams, Amazon Application Recovery Controller (ARC), AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, AWS Identity and Access Management (IAM), Amazon GuardDuty, and Amazon CloudWatch Logs.	February 1, 2023

Change	Description	Date
m:ListTestGridProjects, ec2:DescribeCapacityReservationFleets, ec2:DescribeIpamPools, ec2:DescribeIpams, ec2:GetInstanceTypesFromInstanceRequirement, mobiletargeting:GetApplicationSettings, mobiletargeting:ListTagsForResource, ecr:BatchGetRepositoryScanningConfiguration, iam:ListServerCertificates, guardduty:ListPublishingDestinations, guardduty:DescribePublishingDestination, logs:GetLogDelivery, and logs:ListLogDeliveries		

Change	Description	Date
AWS_ConfigRole – Add airflow:ListTagsForResource, iot:ListCustomMetrics, iot:DescribeCustomMetric, appstream:DescribeDirectoryConfigs, appstream:ListTagsForResource, codeguru-reviewer:DescribeRepositoryAssociation, codeguru-reviewer:ListRepositoryAssociations, healthlake:ListFHIRDatastores, healthlake:DescribeFHIRDatastore, healthlake:ListTagsForResource, kinesisvideo:DescribeStream, kinesisvideo:ListStreams, kinesisvideo:ListTagsForStream, kinesisvideo:DescribeSignalingChannel, kinesisvideo:ListTagsForResource, kinesisvideo:ListSignalingChannels, route53-recovery-control-config:DescribeCluster, route53-recovery-control-config:DescribeRoutingControl, route53-recovery-control-config:DescribeSafetyRule, route53-recovery-control-config:ListClusters, route53-recovery-control-config:ListRoutingControls, route53-recovery-control-config:ListSafetyRules, devicefarm:GetTestGridProject, devicefar	This policy now supports additional permissions for Amazon Managed Workflows for Apache Airflow, AWS IoT, Amazon AppStream 2.0, Amazon CodeGuru Reviewer, AWS HealthLake, Amazon Kinesis Video Streams, Amazon Application Recovery Controller (ARC), AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, AWS Identity and Access Management (IAM), Amazon GuardDuty, and Amazon CloudWatch Logs.	February 1, 2023

Change	Description	Date
m:ListTestGridProjects, ec2:DescribeCapacityReservationFleets, ec2:DescribeIpamPools, ec2:DescribeIpams, ec2:GetInstanceTypesFromInstanceRequirement, mobiletargeting:GetApplicationSettings, mobiletargeting:ListTagsForResource, ecr:BatchGetRepositoryScanningConfiguration, iam:ListServerCertificates, guardduty:ListPublishingDestinations, guardduty:DescribePublishingDestination, logs:GetLogDelivery, and logs:ListLogDeliveries		
ConfigConformsServiceRolePolicy – Update config:DescribeConfigRules	As a security best practice, this policy now removes broad resource-level permission for `config:DescribeConfigRules` .	January 12, 2023

Change	Description	Date
AWSConfigServiceRolePolicy – Add APS:DescribeRuleGroupsNamespace, APS:DescribeWorkspace, APS:ListWorkspaces, auditmanager:GetAssessment, auditmanager:ListAssessments, devicefarm:GetNetworkProfile, AWS Transfer Family devicefarm:GetProject, devicefarm:ListNetworkProfiles, devicefarm:ListTagsForResource, dms:DescribeEndpoints, ds:ListTagsForResource, ec2:DescribeTags, ec2:DescribeTrafficMirrorSessions, ec2:DescribeTrafficMirrorTargets, ec2:GetIpamPoolAllocations, ec2:GetIpamPoolCidrs, glue:GetMLTransform, glue:GetMLTransforms, glue:ListMLTransforms, iot:DescribeScheduledAudit, iot:ListScheduledAudits, ivs:GetChannel, lightsail:GetRelationalDatabases, mediapackage-vod:DescribePackagingConfiguration, mediapackage-vod:ListPackagingConfigurations, networkmanager:DescribeGlobalNetworks, networkmanager:GetTransitGatewayRegistrations,	This policy now supports additional permissions for Amazon Managed Service for Prometheus, AWS Audit Manager, AWS Device Farm, AWS Database Migration Service (AWS DMS), AWS Directory Service, Amazon Elastic Compute Cloud (Amazon EC2), AWS Glue, AWS IoT, Amazon Lightsail, AWS Elemental MediaPackage, AWS Network Manager, Amazon QuickSight, AWS Resource Access Manager, Amazon Application Recovery Controller (ARC), Amazon Simple Storage Service (Amazon S3), and Amazon Timestream.	Decemeber 15, 2022

Change	Description	Date
networkmanager:ListTagsForResource, quicksight:DescribeDashboard, quicksight:DescribeDashboardPermissions, quicksight:DescribeTemplate, quicksight:DescribeTemplatePermissions, quicksight:ListDashboards, quicksight:ListTemplates, ram:ListResources, route53-recovery-control-config:DescribeControlPanel, route53-recovery-control-config:ListControlPanels, route53-recovery-control-config:ListTagsForResource, route53resolver:GetResolverQueryLogConfigAssociation, route53resolver:ListResolverQueryLogConfigAssociations, s3:GetAccessPointForObjectLambda, s3:GetAccessPointPolicyForObjectLambda, s3:GetAccessPointPolicyStatusForObjectLambda, s3:GetMultiRegionAccessPoint, s3:ListAccessPointsForObjectLambda, s3:ListMultiRegionAccessPoints, timestream:DescribeEndpoints, transfer:DescribeConnector, transfer:ListConnectors, and transfer:ListTagsForResource		

Change	Description	Date
AWS_ConfigRole – Add APS:DescribeRuleGroupsNamespace, APS:DescribeWorkspace, APS:ListWorkspaces, auditmanager:GetAssessment, auditmanager:ListAssessments, devicefarm:GetNetworkProfile, devicefarm:GetProject, devicefarm:ListNetworkProfiles, devicefarm:ListTagsForResource, dms:DescribeEndpoints, ds:ListTagsForResource, ec2:DescribeTags, ec2:DescribeTrafficMirrorSessions, ec2:DescribeTrafficMirrorTargets, ec2:GetIpamPoolAllocations, ec2:GetIpamPoolCidrs, glue:GetMLTransform, glue:GetMLTransforms, glue:ListMLTransforms, iot:DescribeScheduledAudit, iot:ListScheduledAudits, ivs:GetChannel, lightsail:GetRelationalDatabases, mediapackage-vod:DescribePackagingConfiguration, mediapackage-vod:ListPackagingConfigurations, networkmanager:DescribeGlobalNetworks, networkmanager:GetTransitGatewayRegistrations, networkmanager:ListTagsForResource, quicksight:D	This policy now supports additional permissions for Amazon Managed Service for Prometheus, AWS Audit Manager, AWS Device Farm, AWS Database Migration Service (AWS DMS), AWS Directory Service, Amazon Elastic Compute Cloud (Amazon EC2), AWS Glue, AWS IoT, Amazon Lightsail, AWS Elemental MediaPackage, AWS Network Manager, Amazon QuickSight, AWS Resource Access Manager, Amazon Application Recovery Controller (ARC), Amazon Simple Storage Service (Amazon S3), and Amazon Timestream.	December 15, 2022

Change	Description	Date
escribeDashboard, quicksight:DescribeDashboardPermissions, quicksight:DescribeTemplate, quicksight:DescribeTemplatePermissions, quicksight:ListDashboards, quicksight:ListTemplates, ram:ListResources, route53-recovery-control-config:DescribeControlPanel, route53-recovery-control-config:ListControlPanels, route53-recovery-control-config:ListTagsForResource, route53resolver:GetResolverQueryLogConfigAssociation, route53resolver:ListResolverQueryLogConfigAssociations, s3:GetAccessPointForObjectLambda, s3:GetAccessPointPolicyForObjectLambda, s3:GetAccessPointPolicyStatusForObjectLambda, s3:GetMultiRegionAccessPoint, s3:ListAccessPointsForObjectLambda, s3:ListMultiRegionAccessPoints, timestream:DescribeEndpoints, transfer:DescribeConnector, transfer:ListConnectors, and transfer:ListTagsForResource		

Change	Description	Date
AWSConfigServiceRolePolicy – Add cloudformation:ListStackResources and cloudformation:ListStacks	This policy now grants permission to return descriptions of all resources of a specified AWS CloudFormation stack and return the summary information for stacks whose status matches the specified StackStatusFilter.	November 7, 2022
AWS_ConfigRole – Add cloudformation:ListStackResources and cloudformation:ListStacks	This policy now grants permission to return descriptions of all resources of a specified AWS CloudFormation stack and return the summary information for stacks whose status matches the specified StackStatusFilter.	November 7, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add acm-pca:GetCertificateAuthorityCsr, acm-pca:ListCertificateAuthorities, acm-pca:ListTags, airflow:GetEnvironment, airflow:ListEnvironments, amplifyuibuilder:ListThemes, appconfig:ListConfigurationProfiles, appconfig:ListDeployments, appconfig:ListDeploymentStrategies, appconfig:ListEnvironments, appconfig:ListHostedConfigurationVersions, cassandra:Select, cloudwatch:DescribeAnomalyDetectors, cloudwatch:GetDashboard, cloudwatch:ListDashboards, connect:DescribePhoneNumber, connect:ListPhoneNumbers, connect:ListPhoneNumbersV2, connect:SearchAvailablePhoneNumbers, databrew:DescribeDataset, databrew:DescribeJob, databrew:DescribeProject, databrew:DescribeRecipe, databrew:DescribeRuleset, databrew:DescribeSchedule, databrew:ListDatasets, databrew:ListJobs, databrew:ListProjects, databrew:ListRecipes, databrew:ListRecipeVers	This policy now supports additional permissions for AWS Certificate Manager, Amazon Managed Workflows for Apache Airflow, AWS Amplify, AWS AppConfig, Amazon Keyspaces, Amazon CloudWatch, Amazon Connect, AWS Glue DataBrew, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service (Amazon EKS), Amazon EventBridge, AWS Fault Injection Service, Amazon Fraud Detector, Amazon FSx, Amazon GameLift Servers, Amazon Location Service, AWS IoT, Amazon Lex, Amazon Lightsail, Amazon Pinpoint, AWS OpsWorks, AWS Panorama, AWS Resource Access Manager, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, AWS RoboMaker, AWS Resource Groups, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), AWS Cloud Map, and AWS Security Token Service.	October 19, 2022

Change	Description	Date
ions, databrew:ListRulesets, databrew:ListSchedules, ec2:DescribeRouteTables, eks:DescribeAddon, eks:DescribeIdentityProviderConfig, eks:ListAddons, eks:ListIdentityProviderConfigs, events:DescribeConnection, events:ListApiDestinations, events:ListConnections, fis:GetExperimentTemplate, fis:ListExperimentTemplates, frauddetector:GetRules, fsx:DescribeBackups, fsx:DescribeSnapshots, fsx:DescribeStorageVirtualMachines, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeVpcPeeringConnections, geo:ListGeofenceCollections, geo:ListPlaceIndexes, geo:ListRouteCalculators, geo:ListTrackers, iot:DescribeAccountAuditConfiguration, iot:DescribeAuthorizer, iot:DescribeDomainConfiguration, iot:DescribeMitigationAction, iot:ListAuthorizers, iot:ListDomainConfigurations, iot:ListMitigationActions, iotsitewise:DescribeAssetModel, iotsitewise:DescribeDashboard, iotsitewise:DescribeGateway, iotsitewise:DescribePortal, iotsitewise:DescribeProject,		

Change	Description	Date
iotsitewise:ListAssetModels, iotsitewise:ListDashboards, iotsitewise:ListGateways, iotsitewise:ListPortals, io tsitewise:ListProjectAssets , iotsitewise:ListProjects, i otsitewise:ListTagsForResou rce, iotwireless:GetSer viceProfile, iotwireless:Ge tWirelessDevice, iotwireles s:GetWirelessGatewayTaskDef inition, iotwireless:ListSe rviceProfiles, iotwireless: ListTagsForResource, iotwir eless:ListWirelessDevices, iotwireless:ListWirelessGat ewayTaskDefinitions, lex:De scribeBotVersion, lex:ListB otVersions, lightsail:GetCo ntainerServices, lightsail :GetDistributions, lightsai l:GetRelationalDatabase, li ghtsail:GetRelationalDataba seParameters, mobiletargeti ng:GetApps, mobiletar geting:GetCampaign, mobiletargeting:GetSegmen t, mobiletargeting:Ge tSegments, opsworks:Describ eInstances, opsworks:Descri beTimeBasedAutoScaling, opsworks:DescribeVolumes, panorama:DescribeAp plicationInstance, panorama :DescribeApplicationInstanc		

Change	Description	Date
eDetails, panorama:DescribePackage, panorama:DescribePackageVersion, panorama:ListApplicationInstances, panorama:ListPackages, quicksight:ListDataSources, ram:ListResourceSharePermissions, rds:DescribeDBProxies, rds:DescribeGlobalClusters, rekognition:ListStreamProcessors, resource-groups:GetGroup, resource-groups:GetGroupConfiguration, resource-groups:GetGroupQuery, resource-groups:GetTags, resource-groups:ListGroupResources, resource-groups:ListGroups, robomaker:ListRobotApplications, robomaker:ListSimulationApplications, route53resolver:GetResolverDnssecConfig, route53resolver:ListResolverDnssecConfigs, s3:ListStorageLensConfigurations, schemas:GetResourcePolicy, servicediscovery:ListInstances, sts:GetCallerIdentity, synthetics:GetGroup, synthetics:ListAssociatedGroups, synthetics:ListGroupResources, and synthetics:ListGroups		

Change	Description	Date
AWS_ConfigRole – Add acm-pca:GetCertificateAuthorityCsr, acm-pca:ListCertificateAuthorities, acm-pca:ListTags, airflow:GetEnvironment, airflow:ListEnvironments, amplifyuibuilder:ListThemes, appconfig:ListConfigurationProfiles, appconfig:ListDeployments, appconfig:ListDeploymentStrategies, appconfig:ListEnvironments, appconfig:ListHostedConfigurationVersions, cassandra:Select, cloudwatch:DescribeAnomalyDetectors, cloudwatch:GetDashboard, cloudwatch:ListDashboards, connect:DescribePhoneNumber, connect:ListPhoneNumbers, connect:ListPhoneNumbersV2, connect:SearchAvailablePhoneNumbers, databrew:DescribeDataset, databrew:DescribeJob, databrew:DescribeProject, databrew:DescribeRecipe, databrew:DescribeRuleset, databrew:DescribeSchedule, databrew:ListDatasets, databrew:ListJobs, databrew:ListProjects, databrew:ListRecipes, databrew:ListRecipeVers	This policy now supports additional permissions for AWS Certificate Manager, Amazon Managed Workflows for Apache Airflow, AWS Amplify, AWS AppConfig, Amazon Keyspaces, Amazon CloudWatch, Amazon Connect, AWS Glue DataBrew, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service (Amazon EKS), Amazon EventBridge, AWS Fault Injection Service, Amazon Fraud Detector, Amazon FSx, Amazon GameLift Servers, Amazon Location Service, AWS IoT, Amazon Lex, Amazon Lightsail, Amazon Pinpoint, AWS OpsWorks, AWS Panorama, AWS Resource Access Manager, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, AWS RoboMaker, AWS Resource Groups, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), AWS Cloud Map, and AWS Security Token Service.	October 19, 2022

Change	Description	Date
ions, databrew:ListRulesets, databrew:ListSchedules, ec2:DescribeRouteTables, eks:DescribeAddon, eks:DescribeIdentityProviderConfig, eks:ListAddons, eks:ListIdentityProviderConfigs, events:DescribeConnection, events:ListApiDestinations, events:ListConnections, fis:GetExperimentTemplate, fis:ListExperimentTemplates, frauddetector:GetRules, fsx:DescribeBackups, fsx:DescribeSnapshots, fsx:DescribeStorageVirtualMachines, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeVpcPeeringConnections, geo:ListGeofenceCollections, geo:ListPlaceIndexes, geo:ListRouteCalculators, geo:ListTrackers, iot:DescribeAccountAuditConfiguration, iot:DescribeAuthorizer, iot:DescribeDomainConfiguration, iot:DescribeMitigationAction, iot:ListAuthorizers, iot:ListDomainConfigurations, iot:ListMitigationActions, iotsitewise:DescribeAssetModel, iotsitewise:DescribeDashboard, iotsitewise:DescribeGateway, iotsitewise:DescribePortal, iotsitewise:DescribeProject,		

Change	Description	Date
iotsitewise:ListAssetModels, iotsitewise:ListDashboards, iotsitewise:ListGateways, iotsitewise:ListPortals, io tsitewise:ListProjectAssets , iotsitewise:ListProjects, i otsitewise:ListTagsForResou rce, iotwireless:GetSer viceProfile, iotwireless:Ge tWirelessDevice, iotwireles s:GetWirelessGatewayTaskDef inition, iotwireless:ListSe rviceProfiles, iotwireless: ListTagsForResource, iotwir eless:ListWirelessDevices, iotwireless:ListWirelessGat ewayTaskDefinitions, lex:De scribeBotVersion, lex:ListB otVersions, lightsail:GetCo ntainerServices, lightsail :GetDistributions, lightsai l:GetRelationalDatabase, li ghtsail:GetRelationalDataba seParameters, mobiletargeti ng:GetApps, mobiletar geting:GetCampaign, mobiletargeting:GetSegmen t, mobiletargeting:Ge tSegments, opsworks:Describ eInstances, opsworks:Descri beTimeBasedAutoScaling, opsworks:DescribeVolumes, panorama:DescribeAp plicationInstance, panorama :DescribeApplicationInstanc		

Change	Description	Date
eDetails, panorama:DescribePackage, panorama:DescribePackageVersion, panorama:ListApplicationInstances, panorama:ListPackages, quicksight:ListDataSources, ram:ListResourceSharePermissions, rds:DescribeDBProxies, rds:DescribeGlobalClusters, rekognition:ListStreamProcessors, resource-groups:GetGroup, resource-groups:GetGroupConfiguration, resource-groups:GetGroupQuery, resource-groups:GetTags, resource-groups:ListGroupResources, resource-groups:ListGroups, robomaker:ListRobotApplications, robomaker:ListSimulationApplications, route53resolver:GetResolverDnssecConfig, route53resolver:ListResolverDnssecConfigs, s3:ListStorageLensConfigurations, schemas:GetResourcePolicy, servicediscovery:ListInstances, sts:GetCallerIdentity, synthetics:GetGroup, synthetics:ListAssociatedGroups, synthetics:ListGroupResources, and synthetics:ListGroups		

Change	Description	Date
AWSConfigServiceRolePolicy – Add Glue::GetTable	This policy now grants permission to retrieve the AWS Glue Table definition in a Data Catalog for a specified table.	September 14, 2022
AWS_ConfigRole – Add Glue::GetTable	This policy now grants permission to retrieve the AWS Glue Table definition in a Data Catalog for a specified table.	September 14, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add appconfig:ListApplications, appflow:DescribeConnectorProfiles, appsync:GetApiCache, autoscaling-plans:DescribeScalingPlanResources, autoscaling-plans:DescribeScalingPlans, autoscaling-plans:GetScalingPlanResourceForecastData, autoscaling:DescribeWarmPool, backup:DescribeFramework, backup:DescribeReportPlan, backup:ListFrameworks, backup:ListReportPlans, budgets:DescribeBudgetAction, budgets:DescribeBudgetActionsForAccount, budgets:DescribeBudgetActionsForBudget, budgets:ViewBudget, ce:GetAnomalyMonitors, ce:GetAnomalySubscriptions, cloud9:DescribeEnvironmentMemberships, cloud9:DescribeEnvironments, cloud9:ListEnvironments, cloud9:ListTagsForResource, cloudwatch:GetMetricStream, cloudwatch:ListMetricStreams, datasync:DescribeLocationFsxWindows, devops-guru:GetResourceCollection, ds:DescribeDirectories, ec2:DescribeTrafficMirrorFilte	This policy now supports additional permissions for Amazon AppFlow, Amazon CloudWatch, Amazon CloudWatch RUM, Amazon CloudWatch Synthetics, Amazon Connect Customer Profiles, Amazon Connect Voice ID, Amazon DevOps Guru, Amazon Elastic Compute Cloud (Amazon EC2), Amazon EC2 Auto Scaling, Amazon EMR, Amazon EventBridge, Amazon EventBridge Schemas, Amazon FinSpace, Amazon Fraud Detector, Amazon GameLift Servers, Amazon Interactive Video Service (Amazon IVS), Amazon Managed Service for Apache Flink, EC2 Image Builder, Amazon Lex, Amazon Lightsail, Amazon Location Service, Amazon Lookout for Equipment, Amazon Lookout for Metrics, Amazon Lookout for Vision, Amazon Managed Blockchain, Amazon MQ, Amazon Nimble StudioAmazon Pinpoint, Amazon QuickSight, Amazon Application Recovery Controller (ARC), Amazon Route 53 Resolver, Amazon Simple Storage	September 7, 2022

Change	Description	Date
rs, ec2:DescribeTrafficMirrorTargets, ec2:GetNetworkInsightsAccessScopeAnalysisFindings, ec2:GetNetworkInsightsAccessScopeContent, elasticmapreduce:DescribeStudio, elasticmapreduce:GetStudioSessionMapping, elasticmapreduce:ListStudios, elasticmapreduce:ListStudioSessionMappings, events:DescribeEndpoint, events:DescribeEventBus, events:DescribeRule, events:ListArchives, events:ListEndpoints, events:ListEventBuses, events:ListRules, events:ListTagsForResource, events:ListTargetsByRule, finspace:GetEnvironment, finspace:ListEnvironments, frauddetector:GetDetectors, frauddetector:GetDetectorVersion, frauddetector:GetEntityTypes, frauddetector:GetEventTypes, frauddetector:GetExternalModels, frauddetector:GetLabels, frauddetector:GetModels, frauddetector:GetOutcomes, frauddetector:GetVariables, frauddetector:ListTagsForResource, gamelift:DescribeAlias, gamelift:DescribeBuild, gamelift:DescribeFleetAttributes, gamelift:Descr	Service (Amazon S3), Amazon SimpleDB, Amazon Simple Email Service (Amazon SES), Amazon Timestream, AWS AppConfig, AWS AppSync, AWS Auto Scaling, AWS Backup, AWS Budgets, AWS Cost Explorer, AWS Cloud9, AWS Directory Service, AWS DataSync, AWS Elemental MediaPackage, AWS Glue, AWS IoT, AWS IoT Analytics, AWS IoT Events, AWS IoT SiteWise, AWS IoT TwinMaker, AWS Lake Formation, AWS License Manager, AWS Resilience Hub, AWS Signer, and AWS Transfer Family.	

Change	Description	Date
ibeFleetCapacity, gamelift: DescribeFleetLocationAttributes, gamelift:DescribeFleetLocationCapacity, gamelift:DescribeFleetPortSettings, gamelift:DescribeGameServerGroup, gamelift:DescribeGameSessionQueues, gamelift:DescribeMatchmakingConfigurations, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeRuntimeConfiguration, gamelift:DescribeScript, gamelift:DescribeVpcPeeringAuthorizations, gamelift:ListAliases, gamelift:ListBuilds, gamelift: ListFleets, gamelift:ListGameServerGroups, gamelift: ListScripts, gamelift:ListTagsForResource, geo:ListMaps, glue:GetClassifier, glue:GetClassifiers, imagebuilder:GetContainerRecipe, imagebuilder:GetImage, imagebuilder:GetImagePipeline, imagebuilder:GetImageRecipe, imagebuilder:ListContainerRecipes, imagebuilder:ListImageBuildVersions, imagebuilder:ListImagePipelines, imagebuilder:ListImageRecipes, imagebuilder:ListImages, iot:DescribeCertificate, iot:DescribeDimensio		

Change	Description	Date
n, iot:DescribeRoleAlias, iot:DescribeSecurityProfile, iot:GetPolicy, iot:GetTopicRule, iot:GetTopicRuleDestination, iot:ListCertificates, iot:ListDimensions, iot:ListPolicies, iot:ListRoleAliases, iot:ListSecurityProfiles, iot:ListSecurityProfilesForTarget, iot:ListTagsForResource, iot:ListTargetsForSecurityProfile, iot:ListTopicRuleDestinations, iot:ListTopicRules, iot:ListV2LoggingLevels, iot:ValidateSecurityProfileBehaviors, iotanalytics:DescribeChannel, iotanalytics:DescribeDataset, iotanalytics:DescribeDatastore, iotanalytics:DescribePipeline, iotanalytics:ListChannels, iotanalytics:ListDatasets, iotanalytics:ListDatastores, iotanalytics:ListPipelines, iotanalytics:ListTagsForResource, iotevents:DescribeAlarmModel, iotevents:DescribeDetectorModel, iotevents:DescribeInput, iotevents:ListAlarmModels, iotevents:ListDetectorModels, iotevents:ListInputs, iotevents:ListTagsForResource, iotsitewise:DescribeAccessPolicy, iotsitewise:Descri		

Change	Description	Date
beAsset, iotsitewise:ListAccessPolicies, iotsitewise:ListAssets, iottwinmaker:GetEntity, iottwinmaker:GetScene, iottwinmaker:GetWorkspace, iottwinmaker:ListEntities, iottwinmaker:ListScenes, iottwinmaker:ListTagsForResource, iottwinmaker:ListWorkspaces, ivs:GetPlaybackKeyPair, ivs:GetRecordingConfiguration, ivs:GetStreamKey, ivs:ListChannels, ivs:ListPlaybackKeyPairs, ivs:ListRecordingConfigurations, ivs:ListStreamKeys, ivs:ListTagsForResource, kinesisanalytics:ListApplications, lakeformation:DescribeResource, lakeformation:GetDataLakeSettings, lakeformation:ListPermissions, lakeformation:ListResources, lex:DescribeBot, lex:DescribeBotAlias, lex:DescribeResourcePolicy, lex:ListBotAliases, lex:ListBotLocales, lex:ListBots, lex:ListTagsForResource, license-manager:GetGrant, license-manager:GetLicense, license-manager:ListDistributedGrants, license-manager:ListLicenses, license-manager:ListReceivedGrants, lightsail:GetAlarm		

Change	Description	Date
s, lightsail:GetBuckets, lightsail:GetCertificates, lightsail:GetDisk, lightsail :GetDisks, lightsail:GetInsta nce, lightsail:GetInstances , lightsail:GetKeyPair, light sail:GetLoadBalancer, lightsail :GetLoadBalancers, lightsai l:GetLoadBalancerTlsCertifi cates, lightsail:GetStati cIp, lightsail:GetStaticIps, lookoutequipment:Describe InferenceScheduler, lookout equipment:ListTagsForResour ce, lookoutmetrics:Describe Alert, lookoutmetrics:Descr ibeAnomalyDetector, lookoutmetrics:ListAlerts, lookoutmetrics:ListAnomalyD etectors, lookoutmetrics:Li stMetricSets, lookoutmetric s:ListTagsForResource, lookoutvision:Describe Project, lookoutvision:List Projects, managedblockchain :GetMember, managedbl ockchain:GetNetwork, managedblockchain:GetNode, managedblockchain:ListInvit ations, managedblockchain:L istMembers, managedbl ockchain:ListNodes, mediapa ckage-vod:DescribePackaging Group, mediapackage-vod:ListPackagingGroups,		

Change	Description	Date
mediapackage-vod:ListTagsForResource, mobiletargeting:GetInAppTemplate, mobiletargeting:ListTemplates, mq:DescribeBroker, mq:ListBrokers, nimble:GetLaunchProfile, nimble:GetLaunchProfileDetails, nimble:GetStreamingImage, nimble:GetStudio, nimble:GetStudioComponent, nimble:ListLaunchProfiles, nimble:ListStreamingImages, nimble:ListStudioComponents, nimble:ListStudios, profile:GetDomain, profile:GetIntegration, profile:GetProfileObjectType, profile:ListDomains, profile:ListIntegrations, profile:ListProfileObjectTypes, profile:ListTagsForResource, quicksight:DescribeAnalysis, quicksight:DescribeAnalysisPermissions, quicksight:DescribeDataSet, quicksight:DescribeDataSetPermissions, quicksight:DescribeTheme, quicksight:DescribeThemePermissions, quicksight:ListAnalyses, quicksight:ListDataSets, quicksight:ListThemes, resiliencehub:DescribeApp, resiliencehub:DescribeAppVersionTemplate, resiliencehub:De		

Change	Description	Date
scribeResiliencyPolicy, resiliencehub:ListApps, resiliencehub:ListAppVersionResourceMappings, resiliencehub:ListResiliencyPolicies, route53-recovery-readiness:GetCell, route53-recovery-readiness:GetReadinessCheck, route53-recovery-readiness:GetRecoveryGroup, route53-recovery-readiness:GetResourceSet, route53-recovery-readiness:ListCells, route53-recovery-readiness:ListReadinessChecks, route53-recovery-readiness:ListRecoveryGroups, route53-recovery-readiness:ListResourceSets, route53resolver:GetFirewallDomainList, route53resolver:GetFirewallRuleGroup, route53resolver:GetFirewallRuleGroupAssociation, route53resolver:GetResolverQueryLogConfig, route53resolver:ListFirewallDomainLists, route53resolver:ListFirewallDomains, route53resolver:ListFirewallRuleGroupAssociations, route53resolver:ListFirewallRuleGroups, route53resolver:ListFirewallRules, route53resolver:ListResolverQueryLogConfigs, rum:GetAppMonitor,		

Change	Description	Date
rum:GetAppMonitorData, rum:ListAppMonitors, rum:ListTagsForResource, s3-outposts:GetAccessPoint, s3-outposts:GetAccessPointPolicy, s3-outposts:GetBucket, s3-outposts:GetBucketPolicy, s3-outposts:GetBucketTagging, s3-outposts:GetLifecycleConfiguration, s3-outposts:ListAccessPoints, s3-outposts:ListEndpoints, s3-outposts:ListRegionalBuckets, schemas:DescribeDiscoverer, schemas:DescribeRegistry, schemas:DescribeSchema, schemas:ListDiscoverers, schemas:ListRegistries, schemas:ListSchemas, sdb:GetAttributes, sdb:ListDomains, ses:ListEmailTemplates, ses:ListReceiptFilters, ses:ListReceiptRuleSets, ses:ListTemplates, signer:GetSigningProfile, signer:ListProfilePermissions, signer:ListSigningProfiles, synthetics:DescribeCanaries, synthetics:DescribeCanariesLastRun, synthetics:DescribeRuntimeVersions, synthetics:GetCanary, synthetics:GetCanaryRuns, synthetics:ListTagsForResource, timestream:DescribeDatabase, timestream:Describ		

Change	Description	Date
eTable, timestream:ListDatabases, timestream:ListTables, timestream:ListTagsForResource, transfer:DescribeServer, transfer:DescribeUser, transfer:DescribeWorkflow, transfer:ListServers, transfer:ListUsers, transfer:ListWorkflows, voiceid:DescribeDomain, and voiceid:ListTagsForResource		

Change	Description	Date
AWS_ConfigRole – Add appconfig:ListApplications, appflow:DescribeConnectorProfiles, appsync:GetApiCache, autoscaling-plans:DescribeScalingPlanResources, autoscaling-plans:DescribeScalingPlans, autoscaling-plans:GetScalingPlanResourceForecastData, autoscaling:DescribeWarmPool, backup:DescribeFramework, backup:DescribeReportPlan, backup:ListFrameworks, backup:ListReportPlans, budgets:DescribeBudgetAction, budgets:DescribeBudgetActionsForAccount, budgets:DescribeBudgetActionsForBudget, budgets:ViewBudget, ce:GetAnomalyMonitors, ce:GetAnomalySubscriptions, cloud9:DescribeEnvironmentMemberships, cloud9:DescribeEnvironments, cloud9:ListEnvironments, cloud9:ListTagsForResource, cloudwatch:GetMetricStream, cloudwatch:ListMetricStreams, datasync:DescribeLocationFsxWindows, devops-guru:GetResourceCollection, ds:DescribeDirectories, ec2:DescribeTrafficMirrorTargets, ec2:G	This policy now supports additional permissions for Amazon AppFlow, Amazon CloudWatch, Amazon CloudWatch RUM, Amazon CloudWatch Synthetics, Amazon Connect Customer Profiles, Amazon Connect Voice ID, Amazon DevOps Guru, Amazon Elastic Compute Cloud (Amazon EC2), Amazon EC2 Auto Scaling, Amazon EMR, Amazon EventBridge, Amazon EventBridge Schemas, Amazon FinSpace, Amazon Fraud Detector, Amazon GameLift Servers, Amazon Interactive Video Service (Amazon IVS), Amazon Managed Service for Apache Flink, EC2 Image Builder, Amazon Lex, Amazon Lightsail, Amazon Location Service, Amazon Lookout for Equipment, Amazon Lookout for Metrics, Amazon Lookout for Vision, Amazon Managed Blockchain, Amazon MQ, Amazon Nimble StudioAmazon Pinpoint, Amazon QuickSight, Amazon Application Recovery Controller (ARC), Amazon Route 53 Resolver, Amazon Simple Storage	September 7, 2022

Change	Description	Date
etNetworkInsightsAccessScopeAnalysisFindings, ec2:GetNetworkInsightsAccessScopeContent, elasticmapreduce:DescribeStudio, elasticmapreduce:GetStudioSessionMapping, elasticmapreduce:ListStudios, elasticmapreduce:ListStudioSessionMappings, events:DescribeEndpoint, events:DescribeEventBus, events:DescribeRule, events:ListArchives, events:ListEndpoints, events:ListEventBuses, events:ListRules, events:ListTagsForResource, events:ListTargetsByRule, finspace:GetEnvironment, finspace:ListEnvironments, frauddetector:GetDetectors, frauddetector:GetDetectorVersion, frauddetector:GetEntityTypes, frauddetector:GetEventTypes, frauddetector:GetExternalModels, frauddetector:GetLabels, frauddetector:GetModels, frauddetector:GetOutcomes, frauddetector:GetVariables, frauddetector:ListTagsForResource, gamelift:DescribeAlias, gamelift:DescribeBuild, gamelift:DescribeFleetAttributes, gamelift:DescribeFleetCapacity, gamelift:DescribeFleetLocationAttrib	Service (Amazon S3), Amazon SimpleDB, Amazon Simple Email Service (Amazon SES), Amazon Timestream, AWS AppConfig, AWS AppSync, AWS Auto Scaling, AWS Backup, AWS Budgets, AWS Cost Explorer, AWS Cloud9, AWS Directory Service, AWS DataSync, AWS Elemental MediaPackage, AWS Glue, AWS IoT, AWS IoT Analytics, AWS IoT Events, AWS IoT SiteWise, AWS IoT TwinMaker, AWS Lake Formation, AWS License Manager, AWS Resilience Hub, AWS Signer, and AWS Transfer Family	

Change	Description	Date
utes, gamelift:DescribeFleetLocationCapacity, gamelift:DescribeFleetPortSettings, gamelift:DescribeGameServerGroup, gamelift:DescribeGameSessionQueues, gamelift:DescribeMatchmakingConfigurations, gamelift:DescribeMatchmakingRuleSets, gamelift:DescribeRuntimeConfiguration, gamelift:DescribeScript, gamelift:DescribeVpcPeeringAuthorizations, gamelift:ListAliases, gamelift:ListBuilds, gamelift:ListFleets, gamelift:ListGameServerGroups, gamelift:ListScripts, gamelift:ListTagsForResource, geo:ListMaps, glue:GetClassifier, glue:GetClassifiers, imagebuilder:GetContainerRecipe, imagebuilder:GetImage, imagebuilder:GetImagePipeline, imagebuilder:GetImageRecipe, imagebuilder:ListContainerRecipes, imagebuilder:ListImageBuildVersions, imagebuilder:ListImagePipelines, imagebuilder:ListImageRecipes, imagebuilder:ListImages, iot:DescribeCertificate, iot:DescribeDimension, iot:DescribeRoleAlias, iot:DescribeSecurityProfile,		

Change	Description	Date
iot:GetPolicy, iot:GetTopicRule, iot:GetTopicRuleDestination, iot:ListCertificates, iot:ListDimensions, iot:ListPolicies, iot:ListRoleAliases, iot:ListSecurityProfiles, iot:ListSecurityProfilesForTarget, iot:ListTagsForResource, iot:ListTargetsForSecurityProfile, iot:ListTopicRuleDestinations, iot:ListTopicRules, iot:ListV2LoggingLevels, iot:ValidateSecurityProfileBehaviors, iotanalytics:DescribeChannel, iotanalytics:DescribeDataset, iotanalytics:DescribeDatastore, iotanalytics:DescribePipeline, iotanalytics:ListChannels, iotanalytics:ListDatasets, iotanalytics:ListDatastores, iotanalytics:ListPipelines, iotanalytics:ListTagsForResource, iotevents:DescribeAlarmModel, iotevents:DescribeDetectorModel, iotevents:DescribeInput, iotevents:ListAlarmModels, iotevents:ListDetectorModels, iotevents:ListInputs, iotevents:ListTagsForResource, iotsitewise:DescribeAccessPolicy, iotsitewise:DescribeAsset, iotsitewise:ListAccessPolicies, iotsitewise:ListAs		

Change	Description	Date
sets, iottwinmaker:GetEntity, iottwinmaker:GetScene, iottwinmaker:GetWorkspace, iottwinmaker:ListEntities, iottwinmaker:ListScenes, iottwinmaker:ListTagsForResource, iottwinmaker:ListWorkspaces, ivs:GetPlaybackKeyPair, ivs:GetRecordingConfiguration, ivs:GetStreamKey, ivs:ListChannels, ivs:ListPlaybackKeyPairs, ivs:ListRecordingConfigurations, ivs:ListStreamKeys, ivs:ListTagsForResource, kinesisanalytics:ListApplications, lakeformation:DescribeResource, lakeformation:GetDataLakeSettings, lakeformation:ListPermissions, lakeformation:ListResources, lex:DescribeBot, lex:DescribeBotAlias, lex:DescribeResourcePolicy, lex:ListBotAliases, lex:ListBotLocales, lex:ListBots, lex:ListTagsForResource, license-manager:GetGrant, license-manager:GetLicense, license-manager:ListDistributedGrants, license-manager:ListLicenses, license-manager:ListReceivedGrants, lightsail:GetAlarms, lightsail:GetBuckets, lightsail:GetCertificates,		

Change	Description	Date
lightsail:GetDisk, lightsail :GetDisks, lightsail:GetInsta nce, lightsail:GetInstances , lightsail:GetKeyPair, light sail:GetLoadBalancer, lightsail :GetLoadBalancers, lightsai l:GetLoadBalancerTlsCertifi cates, lightsail:GetStati cIp, lightsail:GetStaticIps, lookoutequipment:Describe InferenceScheduler, lookout equipment:ListTagsForResour ce, lookoutmetrics:Describe Alert, lookoutmetrics:Descr ibeAnomalyDetector, lookoutmetrics:ListAlerts, lookoutmetrics:ListAnomalyD etectors, lookoutmetrics:Li stMetricSets, lookoutmetric s:ListTagsForResource, lookoutvision:Describe Project, lookoutvision:List Projects, managedblockchain :GetMember, managedbl ockchain:GetNetwork, managedblockchain:GetNode, managedblockchain:ListInvit ations, managedblockchain:L istMembers, managedbl ockchain:ListNodes, mediapa ckage-vod:DescribePackaging Group, mediapackage-vod:ListPackagingGroups, mediapackage-vod:L istTagsForResource, mobilet		

Change	Description	Date
argeting:GetInAppTemplate, mobiletargeting:ListTemplates, mq:DescribeBroker, mq:ListBrokers, nimble:GetLaunchProfile, nimble:GetLaunchProfileDetails, nimble:GetStreamingImage, nimble:GetStudio, nimble:GetStudioComponent, nimble:ListLaunchProfiles, nimble:ListStreamingImages, nimble:ListStudioComponents, nimble:ListStudios, profile:GetDomain, profile:GetIntegration, profile:GetProfileObjectType, profile:ListDomains, profile:ListIntegrations, profile:ListProfileObjectTypes, profile:ListTagsForResource, quicksight:DescribeAnalysis, quicksight:DescribeAnalysisPermissions, quicksight:DescribeDataSet, quicksight:DescribeDataSetPermissions, quicksight:DescribeTheme, quicksight:DescribeThemePermissions, quicksight:ListAnalyses, quicksight:ListDataSets, quicksight:ListThemes, resiliencehub:DescribeApp, resiliencehub:DescribeAppVersionTemplate, resiliencehub:DescribeResiliencyPolicy, resiliencehub:ListApps, res		

Change	Description	Date
iliencehub:ListAppVersionResourceMappings, resilienceh ub:ListResiliencyPolicies, route53-recovery-readiness: GetCell, route53-recovery-r eadiness:GetReadinessCheck, route53-recovery-readiness :GetRecoveryGroup, route53-recovery-readiness:GetResou rceSet, route53-recovery-re adiness:ListCells, route53-recovery-readiness:ListRead inessChecks, route53-recove ry-readiness:ListRecoveryGr oups, route53-recovery-readiness:ListResource Sets, route53resolver:GetFi rewallDomainList, route53re solver:GetFirewallRuleGroup , route53resolver:GetFirewa llRuleGroupAssociation, route53resolver:GetRe solverQueryLogConfig, route 53resolver:ListFirewallDoma inLists, route53resolver:Li stFirewallDomains, route53r esolver:ListFirewallRuleGro upAssociations, route53reso lver:ListFirewallRuleGroups , route53resolver:ListFirew allRules, route53resolver:L istResolverQueryLogConfigs, rum:GetAppMonitor, rum:GetAppMonitorData, rum:ListAppMonitors, rum:Li		

Change	Description	Date
stTagsForResource, s3-outposts:GetAccessPoint, s3-outposts:GetAccessPointPolicy, s3-outposts:GetBucket, s3-outposts:GetBucketPolicy, s3-outposts:GetBucketTagging, s3-outposts:GetLifecycleConfiguration, s3-outposts:ListAccessPoints, s3-outposts:ListEndpoints, s3-outposts:ListRegionalBuckets, schemas:DescribeDiscoverer, schemas:DescribeRegistry, schemas:DescribeSchema, schemas:ListDiscoverers, schemas:ListRegistries, schemas:ListSchemas, sdb:GetAttributes, sdb:ListDomains, ses:ListEmailTemplates, ses:ListReceiptFilters, ses:ListReceiptRuleSets, ses:ListTemplates, signer:GetSigningProfile, signer:ListProfilePermissions, signer:ListSigningProfiles, synthetics:DescribeCanaries, synthetics:DescribeCanariesLastRun, synthetics:DescribeRuntimeVersions, synthetics:GetCanary, synthetics:GetCanaryRuns, synthetics:ListTagsForResource, timestream:DescribeDatabase, timestream:DescribeTable, timestream:ListDatabases, timestream:ListTab		

Change	Description	Date
les, timestream:ListTagsFor Resource, transfer:DescribeS erver, transfer:DescribeUser, transfer:DescribeWorkflow, transfer:ListServers, transfer: ListUsers, transfer:ListWor kflows, voiceid:DescribeDo main, and voiceid:ListTa gsForResource		
AWSConfigServiceRolePolicy – Add datasync:ListAgent s, datasync:ListLocations, datasync:ListTasks, servicedi scovery:ListNamespaces, ser vicediscovery:ListServices, and ses:ListContactLists	This policy now grants permission to return a list of AWS DataSync agents, DataSync source and destinati on locations, and DataSync tasks in an AWS account; list summary information about the AWS Cloud Map namesp aces and services that are associated with one or more specified namespaces in an AWS account; and list all the Amazon Simple Email Service (Amazon SES) contact lists available in AWS account.	August 22, 2022

Change	Description	Date
AWS_ConfigRole – Add datasync:ListAgents, datasync:ListLocations, datasync:ListTasks, servicediscovery:ListNamespaces, servicediscovery:ListServices, and ses:ListContactLists	This policy now grants permission to return a list of AWS DataSync agents, DataSync source and destination locations, and DataSync tasks in an AWS account; list summary information about the AWS Cloud Map namespaces and services that are associated with one or more specified namespaces in an AWS account; and list all the Amazon Simple Email Service (Amazon SES) contact lists available in AWS account.	August 22, 2022
ConfigConformsServiceRolePolicy – Add cloudwatch:PutMetricData	This policy now grants permission to publish metric data points to Amazon CloudWatch.	July 25, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add amplifyuibuilder:ExportThemes, amplifyuibuilder:GetTheme, appconfig:GetApplication, appconfig:GetApplication, appconfig:GetConfigurationProfile, appconfig:GetConfigurationProfile, appconfig:GetDeployment, appconfig:GetDeploymentStrategy, appconfig:GetEnvironment, appconfig:GetHostedConfigurationVersion, appconfig:ListTagsForResource, appsync:GetGraphqlApi, appsync:ListGraphqlApis, billingconductor:ListPricingRulesAssociatedToPricingPlan, billingconductor:ListAccountAssociations, billingconductor:ListBillingGroups, billingconductor:ListCustomLineItems, billingconductor:ListPricingPlans, billingconductor:ListPricingRules, billingconductor:ListTagsForResource, datasync:DescribeAgent, datasync:DescribeLocationEfs, datasync:DescribeLocationFsxLustre, datasync:DescribeLocationHdfs, datasync:DescribeLocationNfs, datasync:DescribeLocatio	This policy now supports additional permissions for Amazon Elastic Container Service (Amazon ECS), Amazon ElastiCache, Amazon EventBridge, Amazon FSx, Amazon Managed Service for Apache Flink, Amazon Location Service, Amazon Managed Streaming for Apache Kafka, Amazon QuickSight, Amazon Rekognition, AWS RoboMaker, Amazon Simple Storage Service (Amazon S3), Amazon Simple Email Service (Amazon SES), AWS Amplify, AWS AppConfig, AWS AppSync, AWS Billing Conductor, AWS DataSync, AWS Firewall Manager, AWS Glue, AWS IAM Identity Center (IAM Identity Center), EC2 Image Builder, and Elastic Load Balancing.	July 15, 2022

Change	Description	Date
nObjectStorage, datasync:DescribeLocationS3, datasync:DescribeLocationSmb, datasync:DescribeTask, datasync:ListTagsForResource, ecr:DescribePullThroughCacheRules, ecr:DescribeRegistry, ecr:GetRegistryPolicy, elasticache:DescribeCacheParameters, elasticloadbalancing:DescribeListenerCertificates, elasticloadbalancing:DescribeTargetGroupAttributes, elasticloadbalancing:DescribeTargetGroups, elasticloadbalancing:DescribeTargetHealth, events:DescribeApiDestination, events:DescribeArchive, fms:GetNotificationChannel, fms:GetPolicy, fms:ListPolicies, fms:ListTagsForResource, fsx:DescribeVolumes, geo:DescribeGeofenceCollection, geo:DescribeMap, geo:DescribePlaceIndex, geo:DescribeRouteCalculator, geo:DescribeTracker, geo:ListTrackerConsumers, glue:BatchGetJobs, glue:BatchGetWorkflows, glue:GetCrawler, glue:GetCrawlers, glue:GetJob, glue:GetJobs, glue:GetWorkflow, imagebuilder: GetComponent, imagebuilder: List		

Change	Description	Date
ComponentBuildVersions, imagebuilder: ListComponents, imagebuilder:GetDistributionConfiguration, imagebuilder:GetInfrastructureConfiguration, imagebuilder: ListDistributionConfigurations, imagebuilder:ListInfrastructureConfigurations, kafka:DescribeClusterV2, kafka:ListClustersV2, kinesisanalytics:DescribeApplication, kinesisanalytics:ListTagsForResource, quicksight:DescribeDataSource, quicksight:DescribeDataSourcePermissions, quicksight:ListTagsForResource, rekognition:DescribeStreamProcessor, rekognition:ListTagsForResource, robomaker:DescribeRobotApplication, robomaker:DescribeSimulationApplication, s3:GetStorageLensConfiguration, s3:GetStorageLensConfigurationTagging, servicediscovery:GetInstance, servicediscovery:GetNamespace, servicediscovery:GetService, servicediscovery:ListTagsForResource, ses:DescribeReceiptRule, ses:DescribeReceiptRuleSet, ses:GetContactList, ses:GetEmailTemplate, ses:GetTemplate, and		

Change	Description	Date
sso:GetInlinePolicyForPermissionSet		

Change	Description	Date
AWS_ConfigRole – Add amplifyuibuilder:ExportThemes, amplifyuibuilder:GetTheme, appconfig:GetApplication, appconfig:GetApplication, appconfig:GetConfigurationProfile, appconfig:GetConfigurationProfile, appconfig:GetDeployment, appconfig:GetDeploymentStrategy, appconfig:GetEnvironment, appconfig:GetHostedConfigurationVersion, appconfig:ListTagsForResource, appsync:GetGraphqlApi, appsync:ListGraphqlApis, billingconductor: ListPricingRulesAssociatedToPricingPlan, billingconductor:ListAccountAssociations, billingconductor:ListBillingGroups, billingconductor:ListCustomLineItems, billingconductor:ListPricingPlans, billingconductor:ListPricingRules, billingconductor:ListTagsForResource, datasync:DescribeAgent, datasync:DescribeLocationEfs, datasync:DescribeLocationFsxLustre, datasync:DescribeLocationHdfs, datasync:DescribeLocationNfs, datasync:DescribeLocationObjectStorage, datasync:De	This policy now supports additional permissions for Amazon Elastic Container Service (Amazon ECS), Amazon ElastiCache, Amazon EventBridge, Amazon FSx, Amazon Managed Service for Apache Flink, Amazon Location Service, Amazon Managed Streaming for Apache Kafka, Amazon QuickSight, Amazon Rekognition, AWS RoboMaker, Amazon Simple Storage Service (Amazon S3), Amazon Simple Email Service (Amazon SES), AWS Amplify, AWS AppConfig, AWS AppSync, AWS Billing Conductor, AWS DataSync, AWS Firewall Manager, AWS Glue, AWS IAM Identity Center (IAM Identity Center), EC2 Image Builder, and Elastic Load Balancing.	July 15, 2022

Change	Description	Date
scribeLocationS3, datasync: DescribeLocationSmb, datasy nc:DescribeTask, datasync: ListTagsForResource, ecr:De scribePullThroughCacheRules , ecr:DescribeRegistry, ecr:G etRegistryPolicy, elasticac he:DescribeCacheParameters, elasticloadbalancing:Descr ibeListenerCertificates, el asticloadbalancing:Describe TargetGroupAttributes, elas ticloadbalancing:DescribeTa rgetGroups, elasticloadbala ncing:DescribeTargetHealth, events:DescribeApiDestinat ion, events:DescribeArchive, fms:GetNotificationChannel, fms:GetPolicy, fms:ListP olicies, fms:ListTagsForRes ource, fsx:DescribeVolumes, geo:DescribeGeofenceColl ection, geo:DescribeMap, geo:DescribePlaceIndex, geo:DescribeRouteCalculator , geo:DescribeTracker, geo:ListTrackerConsumers, g lue:BatchGetJobs, glue:Batc hGetWorkflows, glue:GetC rawler, glue:GetCrawlers, glue:GetJob, glue:GetJ obs, glue:GetWorkflow, imagebuilder: GetCompon ent, imagebuilder: List ComponentBuildVersions,		

Change	Description	Date
imagebuilder: ListComponents, imagebuilder:GetDistributionConfiguration, imagebuilder:GetInfrastructureConfiguration, imagebuilder:ListDistributionConfigurations, imagebuilder:ListInfrastructureConfigurations, kafka:DescribeClusterV2, kafka:ListClustersV2, kinesisanalytics:DescribeApplication, kinesisanalytics:ListTagsForResource, quicksight:DescribeDataSource, quicksight:DescribeDataSourcePermissions, quicksight:ListTagsForResource, rekognition:DescribeStreamProcessor, rekognition:ListTagsForResource, robomaker:DescribeRobotApplication, robomaker:DescribeSimulationApplication, s3:GetStorageLensConfiguration, s3:GetStorageLensConfigurationTagging, servicediscovery:GetInstance, servicediscovery:GetNamespace, servicediscovery:GetService, servicediscovery:ListTagsForResource, ses:DescribeReceiptRule, ses:DescribeReceiptRuleSet, ses:GetContactList, ses:GetEmailTemplate, ses:GetTemplate, and		

Change	Description	Date
sso:GetInlinePolicyForPermissionSet		

Change	Description	Date
AWSConfigServiceRolePolicy – Add athena:GetDataCatalog, athena:ListDataCatalogs, athena:ListTagsForResource, detective:ListGraphs, detective:ListTagsForResource, glue:BatchGetDevEndpoints, glue:GetDevEndpoint, glue:GetDevEndpoints, glue:GetSecurityConfiguration, glue:GetSecurityConfigurations, glue:GetTags glue:GetWorkGroup, glue:ListCrawlers, glue:ListDevEndpoints, glue:ListJobs, glue:ListMembers, glue:ListWorkflows, glue:ListWorkGroups, guardduty:GetFilter, guardduty:GetIPSet, guardduty:GetThreatIntelSet, guardduty:GetMembers, guardduty:ListFilters, guardduty:ListIPSets, guardduty:ListTagsForResource, guardduty:ListThreatIntelSets, macie:GetMacieSession, ram:GetResourceShareAssociations, ram:GetResourceShares, ses:GetConfigurationSet, ses:GetConfigurationSetEventDestinations, ses:ListConfigurationSets, sso:DescribeInstanceAccessControlAttributeConfiguration, sso:DescribePer	This policy now grants permission to get a specified Amazon Athena data catalog, list the Athena data catalogs in an AWS account, and list tags associated with an Athena workgroup or data catalog resource; to get a list of Amazon Detective behavior graphs and list tags for a Detective behavior graph; get a list of resource metadata for a given list of AWS Glue development endpoint names, get information about a specified AWS Glue development endpoint, get all the AWS Glue development endpoints in an AWS account, retrieve a specified AWS Glue security configuration, get all AWS Glue security configurations, get a list of tags associated with an AWS Glue resource, get information about an AWS Glue workgroup with the specified name, retrieve the names of all AWS Glue crawler resources in an AWS account, get the names of all AWS Glue `DevEndpoint` resources in an AWS account, list the names of all	May 31, 2022

Change	Description	Date
missionSet, sso:ListManaged PoliciesInPermissionSet, sso:ListPermissionSets, and sso:ListTagsForResource	AWS Glue job resources in an AWS account, get details about AWS Glue member accounts, list names of AWS Glue workflows created in an account, and list available AWS Glue workgroups for an account; to retrieve details about an Amazon GuardDuty filter, retrieve a GuardDuty IPSet, retrieve a GuardDuty ThreatInt elSet, retrieve GuardDuty member accounts, get a list of GuardDuty filters, get the IPSets of the GuardDuty service, retrieve tags for the GuardDuty Service, and get the ThreatIntelSets of the GuardDuty service; to get the current status and configuration settings for an Amazon Macie acco unt; to retrieve the resource and principal associations for AWS Resource Access Manager (AWS RAM) resource shares and retrieve details about AWS RAM resource shares; to get information about an Amazon Simple Email Service (Amazon SES) existing configuration set, get a list of event destinati ons that are associated with	

Change	Description	Date
	an Amazon SES configuration set, and list all of the configuration sets associated with an Amazon SES account; and to get a list of Identity Center directory attributes, get the details of an AWS IAM Identity Center permission set, get the IAM managed policy that is attached to a specified IAM Identity Center permission set, get the permissions set for an IAM Identity Center instance, and get tags for IAM Identity Center resources.	

Change	Description	Date
AWS_ConfigRole – Add athena:GetDataCatalog, athena:ListDataCatalogs, athena:ListTagsForResource, detective:ListGraphs, detective:ListTagsForResource, glue:BatchGetDevEndpoints, glue:GetDevEndpoint, glue:GetDevEndpoints, glue:GetSecurityConfiguration, glue:GetSecurityConfigurations, glue:GetTags glue:GetWorkGroup, glue:ListCrawlers, glue:ListDevEndpoints, glue:ListJobs, glue:ListMembers, glue:ListWorkflows, glue:ListWorkGroups, guardduty:GetFilter, guardduty:GetIPSet, guardduty:GetThreatIntelSet, guardduty:GetMembers, guardduty:ListFilters, guardduty:ListIPSets, guardduty:ListTagsForResource, guardduty:ListThreatIntelSets, macie:GetMacieSession, ram:GetResourceShareAssociations, ram:GetResourceShares, ses:GetConfigurationSet, ses:GetConfigurationSetEventDestinations, ses:ListConfigurationSets, sso:DescribeInstanceAccessControlAttributeConfiguration, sso:DescribePer	This policy now grants permission to get a specified Amazon Athena data catalog, list the Athena data catalogs in an AWS account, and list tags associated with an Athena workgroup or data catalog resource; to get a list of Amazon Detective behavior graphs and list tags for a Detective behavior graph; get a list of resource metadata for a given list of AWS Glue development endpoint names, get information about a specified AWS Glue development endpoint, get all the AWS Glue development endpoints in an AWS account, retrieve a specified AWS Glue security configuration, get all AWS Glue security configurations, get a list of tags associated with an AWS Glue resource, get information about an AWS Glue workgroup with the specified name, retrieve the names of all AWS Glue crawler resources in an AWS account, get the names of all AWS Glue `DevEndpoint` resources in an AWS account, list the names of all	May 31, 2022

Change	Description	Date
missionSet, sso:ListManaged PoliciesInPermissionSet, sso:ListPermissionSets, and sso:ListTagsForResource	AWS Glue job resources in an AWS account, get details about AWS Glue member accounts, list names of AWS Glue workflows created in an account, and list available AWS Glue workgroups for an account; to retrieve details about an Amazon GuardDuty filter, retrieve a GuardDuty IPSet, retrieve a GuardDuty ThreatInt elSet, retrieve GuardDuty member accounts, get a list of GuardDuty filters, get the IPSets of the GuardDuty service, retrieve tags for the GuardDuty Service, and get the ThreatIntelSets of the GuardDuty service; to get the current status and configuration settings for an Amazon Macie acco unt; to retrieve the resource and principal associations for AWS Resource Access Manager (AWS RAM) resource shares and retrieve details about AWS RAM resource shares; to get information about an Amazon Simple Email Service (Amazon SES) existing configuration set, get a list of event destinati ons that are associated with	

Change	Description	Date
	an Amazon SES configuration set, and list all of the configuration sets associated with an Amazon SES account; and to get a list of Identity Center directory attributes, get the details of an AWS IAM Identity Center permission set, get the IAM managed policy that is attached to a specified IAM Identity Center permission set, get the permissions set for an IAM Identity Center instance, and get tags for IAM Identity Center resources.	
AWSConfigServiceRolePolicy – Add cloudformation:GetResource, cloudformation:ListResources, cloudtrail:GetEventDataStore, cloudtrail:ListEventDataStores, dax:DescribeParameterGroups, dax:DescribeParameters, dax:DescribeSubnetGroups, DMS:DescribeReplicationTasks, and organizations:ListPolicies	This policy now grants permission to get information about all or a specified AWS CloudTrail event data store (EDS), get information about all or a specified AWS CloudFormation resource, get a list of a DynamoDB Accelerator (DAX) parameter group or subnet group, get information about AWS Database Migration Service (AWS DMS) replication tasks for your account in the current region being accessed, and get a list all policies in an AWS Organizations of a specified type.	April 7, 2022

Change	Description	Date
AWS_ConfigRole – Add cloudformation:GetResource, cloudformation:ListResources, cloudtrail:GetEventDataStore, cloudtrail:ListEventDataStores, dax:DescribeParameterGroups, dax:DescribeParameters, dax:DescribeSubnetGroups, DMS:DescribeReplicationTasks, and organizations:ListPolicies	This policy now grants permission to get information about all or a specified AWS CloudTrail event data store (EDS), get information about all or a specified AWS CloudFormation resource, get a list of a DynamoDB Accelerator (DAX) parameter group or subnet group, get information about AWS Database Migration Service (AWS DMS) replication tasks for your account in the current region being accessed, and get a list all policies in an AWS Organizations of a specified type.	April 7, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add backup-gateway:ListTagsForResource, backup-gateway:ListVirtualMachines, batch:DescribeComputeEnvironments, batch:DescribeJobQueues, batch:ListTagsForResource, dax:ListTags, dms:DescribeCertificates, dynamodb:DescribeGlobalTable, dynamodb:DescribeGlobalTableSettings, ec2:DescribeClientVpnAuthorizationRules, ec2:DescribeClientVpnEndpoints, ec2:DescribeDhcpOptions, ec2:DescribeFleets, ec2:DescribeNetworkAcls, ec2:DescribePlacementGroups, ec2:DescribeSpotFleetRequests, ec2:DescribeVolumeAttribute, ec2:DescribeVolumes, eks:DescribeFargateProfile, eks:ListFargateProfiles, eks:ListTagsForResource, fsx:ListTagsForResource, guardduty:ListOrganizationAdminAccounts, kms:ListAliases, opsworks:DescribeLayers, opsworks:DescribeStacks, opsworks:ListTags, rds:DescribeDBClusterParameterGroups, rds:DescribeDBClusterPara	This policy now supports additional permissions for AWS Backup, AWS Batch, DynamoDB Accelerator, AWS Database Migration Service, Amazon DynamoDB, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service, Amazon FSx, Amazon GuardDuty, AWS Key Management Service, AWS OpsWorks, Amazon Relational Database Service, AWS WAFV2, and Amazon WorkSpaces.	March 14, 2022

Change	Description	Date
meters, states:DescribeActivity, states:ListActivities, wafv2:GetRuleGroup, wafv2:ListRuleGroups, wafv2:ListTagsForResource, workspaces:DescribeConnectionAliases, workspaces:DescribeTags, and workspaces:DescribeWorkspaces		

Change	Description	Date
AWS_ConfigRole – Add backup-gateway:ListTagsForResource, backup-gateway:ListVirtualMachines, batch:DescribeComputeEnvironments, batch:DescribeJobQueues, batch:ListTagsForResource, dax:ListTags, dms:DescribeCertificates, dynamodb:DescribeGlobalTable, dynamodb:DescribeGlobalTableSettings, ec2:DescribeClientVpnAuthorizationRules, ec2:DescribeClientVpnEndpoints, ec2:DescribeDhcpOptions, ec2:DescribeFleets, ec2:DescribeNetworkAcls, ec2:DescribePlacementGroups, ec2:DescribeSpotFleetRequests, ec2:DescribeVolumeAttribute, ec2:DescribeVolumes, eks:DescribeFargateProfile, eks:ListFargateProfiles, eks:ListTagsForResource, fsx:ListTagsForResource, guardduty:ListOrganizationAdminAccounts, kms:ListAliases, opsworks:DescribeLayers, opsworks:DescribeStacks, opsworks:ListTags, rds:DescribeDBClusterParameterGroups, rds:DescribeDBClusterParameters, states:DescribeAct	This policy now supports additional permissions for AWS Backup, AWS Batch, DynamoDB Accelerator, AWS Database Migration Service, Amazon DynamoDB, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service, Amazon FSx, Amazon GuardDuty, AWS Key Management Service, AWS OpsWorks, Amazon Relational Database Service, AWS WAFV2, and Amazon WorkSpaces.	March 14, 2022

Change	Description	Date
ivity, states:ListActivities, wafv2:GetRuleGroup, wafv2:ListRuleGroups, wafv2:ListTagsForResource, workspaces:DescribeConnectionAliases, workspaces:DescribeTags, and workspaces:DescribeWorkspaces		

Change	Description	Date
AWSConfigServiceRolePolicy – Add elasticbeanstalk:DescribeEnvironments, elasticbeanstalk:DescribeConfigurationSettings, account:GetAlternateContact, organizations:DescribePolicy, organizations:ListParents, organizations:ListPoliciesForTarget, es:GetCompatibleElasticsearchVersions, rds:DescribeOptionGroups, rds:DescribeOptionGroups, es:GetCompatibleVersions, codedeploy:GetDeploymentConfig, ecr-public:GetRepositoryPolicy, access-analyzer:GetArchiveRule, and ecs:ListTaskDefinitionFamilies	This policy now grants permission to get details about Elastic Beanstalk environments and a description of the settings for the specified Elastic Beanstalk configuration set, get a map of OpenSearch or Elasticsearch versions, describe the available Amazon RDS option groups for a database, and get information about a CodeDeploy deployment configuration. This policy also now grants permission to retrieve the specified alternate contact attached to an AWS account, retrieve information about an AWS Organizations policy, retrieve an Amazon ECR repository policy, retrieve information about an archived AWS Config rule, retrieve a list of Amazon ECS task definition families, list the root or parent organizational units (OUs) of the specified child OU or account, and list the policies that are attached to the specified target root, organizational unit, or account.	February 10, 2022

Change	Description	Date
AWS_ConfigRole – Add elasticbeanstalk:DescribeEnvironments, elasticbeanstalk:DescribeConfigurationSettings, account:GetAlternateContact, organizations:DescribePolicy, organizations:ListParents, organizations:ListPoliciesForTarget, es:GetCompatibleElasticsearchVersions, rds:DescribeOptionGroups, rds:DescribeOptionGroups, es:GetCompatibleVersions, codedeploy:GetDeploymentConfig, ecr-public:GetRepositoryPolicy, access-analyzer:GetArchiveRule, and ecs:ListTaskDefinitionFamilies	This policy now grants permission to get details about Elastic Beanstalk environments and a description of the settings for the specified Elastic Beanstalk configuration set, get a map of OpenSearch or Elasticsearch versions, describe the available Amazon RDS option groups for a database, and get information about a CodeDeploy deployment configuration. This policy also now grants permission to retrieve the specified alternate contact attached to an AWS account, retrieve information about an AWS Organizations policy, retrieve an Amazon ECR repository policy, retrieve information about an archived AWS Config rule, retrieve a list of Amazon ECS task definition families, list the root or parent organizational units (OUs) of the specified child OU or account, and list the policies that are attached to the specified target root, organizational unit, or account.	February 10, 2022

Change	Description	Date
AWSConfigServiceRolePolicy – Add logs:CreateLogStream, logs:CreateLogGroup, and logs:PutLogEvent	This policy now grants permission to create Amazon CloudWatch log groups and streams and to write logs to created log streams.	December 15, 2021
AWS_ConfigRole – Add logs: CreateLogStream, logs:Crea teLogGroup, and logs: PutLogEvent	This policy now grants permission to create Amazon CloudWatch log groups and streams and to write logs to created log streams.	Decemeber 15, 2021
AWSConfigServiceRolePolicy – Add es:DescribeDomain, es:DescribeDomains, rds:Des cribeDBParameters, and, elas ticache:DescribeSnapshots	This policy now grants permission to get details about an Amazon OpenSearc h Service (OpenSearch Service) domain/domains and to get a detailed parameter list for a particular Amazon Relational Database Service (Amazon RDS) DB parameter group. This policy also grant s permission to get detais about Amazon ElastiCache snapshots.	September 8, 2021

Change	Description	Date
AWS_ConfigRole – Add es:DescribeDomain, es:DescribeDomains, rds:DescribeDBParameters, and, elasticache:DescribeSnapshots	This policy now grants permission to get details about an Amazon OpenSearch Service (OpenSearch Service) domain/domains and to get a detailed parameter list for a particular Amazon Relational Database Service (Amazon RDS) DB parameter group. This policy also grants permission to get detais about Amazon ElastiCache snapshots.	September 8, 2021

Change	Description	Date
AWSConfigServiceRolePolicy – Add logs:ListTagsLogGroup, states:ListTagsForResource, states:ListStateMachines, states:DescribeStateMachine, and additional permissions for AWS resource types	This policy now grants permission to list tags for a log group, list tags for a state machine, and list all state machines. This policy now grants permission to get details about a state machine. This policy also now supports additional permissions for Amazon EC2 Systems Manager (SSM), Amazon Elastic Container Registry, Amazon FSx, Amazon Data Firehose, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Relational Database Service (Amazon RDS), Amazon Route 53, Amazon SageMaker AI, Amazon Simple Notification Service, AWS Database Migration Service, AWS Global Accelerator, and AWS Storage Gateway.	July 28, 2021

Change	Description	Date
AWS_ConfigRole – Add logs: ListTagsLogGroup, states:ListTagsForResource, states:ListStateMachines, states:DescribeStateMachine, and additional permissions for AWS resource types	This policy now grants permission to list tags for a log group, list tags for a state machine, and list all state machines. This policy now grants permission to get details about a state machine. This policy also now supports additional permissions for Amazon EC2 Systems Manager (SSM), Amazon Elastic Container Registry, Amazon FSx, Amazon Data Firehose, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Relational Database Service (Amazon RDS), Amazon Route 53, Amazon SageMaker AI, Amazon Simple Notification Service, AWS Database Migration Service, AWS Global Accelerator, and AWS Storage Gateway.	July 28, 2021

Change	Description	Date
AWSConfigServiceRolePolicy – Add ssm:DescribeDocumentPermission and additional permissions for AWS resource types	This policy now grants permission to view the permissions of AWS Systems Manager documents and information about IAM Access Analyzer. This policy now supports additional AWS resource types for Amazon Kinesis, Amazon ElastiCache, Amazon EMR, AWS Network Firewall, Amazon Route 53, and Amazon Relational Database Service (Amazon RDS). These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types. This policy also now support filtering Lambda@Edge functions for the lambda-inside-vpc AWS Config managed rule.	June 8, 2021

Change	Description	Date
AWS_ConfigRole – Add ssm:DescribeDocumentPermission and additional permissions for AWS resource types	This policy now grants permission to view the permissions of AWS Systems Manager documents and information about IAM Access Analyzer. This policy now supports additional AWS resource types for Amazon Kinesis, Amazon ElastiCache, Amazon EMR, AWS Network Firewall, Amazon Route 53, and Amazon Relational Database Service (Amazon RDS). These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types. This policy also now support filtering Lambda@Edge functions for the lambda-inside-vpc AWS Config managed rule.	June 8, 2021

Change	Description	Date
AWSConfigServiceRolePolicy – Add apigateway:GET permission to make read-only GET calls to API Gateway and s3:GetAccessPointPolicy permission and s3:GetAccessPointPolicyStatus permission to invoke Amazon S3 read-only APIs	This policy now grants permissions that allow AWS Config to make read-only GET calls to API Gateway to support a AWS Config Rule for API Gateway. The policy also adds permissions that allow AWS Config to invoke Amazon Simple Storage Service (Amazon S3) read-only APIs, which are required to support the new `AWS::S3::AccessPoint` resource type.	May 10, 2021
AWS_ConfigRole – Add apigateway:GET permission to make read-only GET calls to API Gateway and s3:GetAccessPointPolicy permission and s3:GetAccessPointPolicyStatus permission to invoke Amazon S3 read-only APIs	This policy now grants permissions that allow AWS Config to make read-only GET calls to API Gateway to support a AWS Config for API Gateway. The policy also adds permissions that allow AWS Config to invoke Amazon Simple Storage Service (Amazon S3) read-only APIs, which are required to support the new `AWS::S3::AccessPoint` resource type.	May 10, 2021

Change	Description	Date
AWSConfigServiceRolePolicy – Add ssm:ListDocuments permission and additional permissions for AWS resource types	This policy now grants permission to view informati on about AWS Systems Manager specified documents . This policy also now supports additional AWS resource types for AWS Backup, Amazon Elastic File System, Amazon ElastiCac he, Amazon Simple Storage Service (Amazon S3), Amazon Elastic Compute Cloud (Amazon EC2), Amazon Kinesis, Amazon SageMaker AI, AWS Database Migration Service, and Amazon Route 53. These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types.	April 1, 2021

Change	Description	Date
AWS_ConfigRole – Add ssm:ListDocuments permission and additional permissions for AWS resource types	This policy now grants permission to view information about AWS Systems Manager specified documents. This policy also now supports additional AWS resource types for AWS Backup, Amazon Elastic File System, Amazon ElastiCache, Amazon Simple Storage Service (Amazon S3), Amazon Elastic Compute Cloud (Amazon EC2), Amazon Kinesis, Amazon SageMaker AI, AWS Database Migration Service, and Amazon Route 53. These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types.	April 1, 2021
`AWSConfigRole` is deprecated	`AWSConfigRole` is deprecated. The replacement policy is `AWS_ConfigRole`.	April 1, 2021
AWS Config started tracking changes	AWS Config started tracking changes for its AWS managed policies.	April 1, 2021

Permissions for the IAM Role Assigned to AWS Config

An IAM role lets you define a set of permissions. AWS Config assumes the role that you assign to it to write to your S3 bucket, publish to your SNS topic, and make `Describe` or `List` API requests to

get configuration details for your AWS resources. For more information about IAM roles, see IAM Roles in the *IAM User Guide*.

When you use the AWS Config console to create or update an IAM role, AWS Config automatically attaches the required permissions for you. For more information, see Setting Up AWS Config with the Console.

> **Policies and compliance results**
>
> IAM policies and other policies managed in AWS Organizations can impact whether AWS Config has permissions to record configuration changes for your resources. Additionally, rules directly evaluate the configuration of a resource and rules don't take into account these policies when running evaluations. Make sure that the policies in effect align with how you intend to use AWS Config.

Contents

- Creating IAM Role Policies
  - Adding an IAM Trust Policy to your Role
  - IAM Role Policy for your S3 Bucket
  - IAM Role Policy for KMS Key
  - IAM Role Policy for Amazon SNS Topic
  - IAM Role Policy for Getting Configuration Details
  - Managing Permissions for S3 Bucket Recording

Creating IAM Role Policies

When you use the AWS Config console to create an IAM role, AWS Config automatically attaches the required permissions to the role for you.

If you are using the AWS CLI to set up AWS Config or you are updating an existing IAM role, you must manually update the policy to allow AWS Config to access your S3 bucket, publish to your SNS topic, and get configuration details about your resources.

Adding an IAM Trust Policy to your Role

You can create an IAM trust policy that enables AWS Config to assume a role and use it to track your resources. For more information about trust policies, see Roles terms and concepts in the *IAM User Guide*.

The following is an example trust policy for AWS Config roles:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "",
      "Effect": "Allow",
      "Principal": {
        "Service": "config.amazonaws.com"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "AWS:SourceAccount": "sourceAccountID"
        }
      }
    }
  ]
}
```

You can use the `AWS:SourceAccount` condition in the IAM Role Trust relationship above to restrict the Config service principal to only interact with the AWS IAM Role when performing operations on behalf of specific accounts.

AWS Config also supports the `AWS:SourceArn` condition which restricts the Config service principal to only assume the IAM Role when performing operations on behalf of the owning account. When using the AWS Config service principal, the `AWS:SourceArn` property will always be set to `arn:aws:config:sourceRegion:sourceAccountID:*` where `sourceRegion` is the region of the customer managed configuration recorder and `sourceAccountID` is the ID of the account containing the customer managed configuration recorder.

For example, add the following condition restrict the Config service principal to only assume the IAM Role only on behalf of a customer managed configuration recorder in the `us-east-1` region

in the account 123456789012: `"ArnLike": {"AWS:SourceArn": "arn:aws:config:us-east-1:123456789012:*"}`.

IAM Role Policy for your S3 Bucket

The following example policy grants AWS Config permission to access your S3 bucket:

```
{
  "Version":"2012-10-17",
  "Statement":[
    {
      "Effect":"Allow",
      "Action":[
        "s3:PutObject",
        "s3:PutObjectAcl"
      ],
      "Resource":[
        "arn:aws:s3:::amzn-s3-demo-bucket/prefix/AWSLogs/myAccountID/*"
      ],
      "Condition":{
        "StringLike":{
          "s3:x-amz-acl":"bucket-owner-full-control"
        }
      }
    },
    {
      "Effect":"Allow",
      "Action":[
        "s3:GetBucketAcl"
      ],
      "Resource":"arn:aws:s3:::amzn-s3-demo-bucket"
    }
  ]
}
```

IAM Role Policy for KMS Key

The following example policy grants AWS Config permission to use KMS-based encryption on new objects for S3 bucket delivery:

```
{
    "Version": "2012-10-17",
    "Statement": [
```

```
        {
            "Effect": "Allow",
            "Action": [
                "kms:Decrypt",
                "kms:GenerateDataKey"
            ],
            "Resource": "myKMSKeyARN"
        }
    ]
}
```

IAM Role Policy for Amazon SNS Topic

The following example policy grants AWS Config permission to access your SNS topic:

```
{
  "Version": "2012-10-17",
  "Statement":
   [
     {
      "Effect":"Allow",
      "Action":"sns:Publish",
      "Resource":"mySNStopicARN"
     }
    ]
}
```

If your SNS topic is encrypted for additional setup instructions, see Configuring AWS KMS Permissions in the *Amazon Simple Notification Service Developer Guide*.

IAM Role Policy for Getting Configuration Details

It is recommended to use the AWS Config service-linked role: `AWSServiceRoleForConfig`. Service-linked roles are predefined and include all the permissions that AWS Config requires to call other AWS services. The AWS Config service-linked role is required for service-linked configuration recorders. For more information, see Using Service-Linked Roles for AWS Config.

If you create or update a role with the console, AWS Config attaches the **AWSServiceRoleForConfig** for you.

If you use the AWS CLI, use the `attach-role-policy` command and specify the Amazon Resource Name (ARN) for **AWSServiceRoleForConfig**:

```
$ aws iam attach-role-policy --role-name myConfigRole --policy-arn
 arn:aws:iam::aws:policy/aws-service-role/AWSServiceRoleForConfig
```

Managing Permissions for S3 Bucket Recording

AWS Config records and delivers notifications when an S3 bucket is created, updated, or deleted.

It is recommended to use the AWS Config service-linked role: `AWSServiceRoleForConfig`. Service-linked roles are predefined and include all the permissions that AWS Config requires to call other AWS services. The AWS Config service-linked role is required for service-linked configuration recorders. For more information, see Using Service-Linked Roles for AWS Config.

Updating the IAM Role for the customer managed configuration recorder

You can update the IAM role used by the customer managed configuration recorder. Before you update the IAM role, ensure that you have created a new role to replace the old one. You must attach policies to the new role that grant permissions to AWS Config to record configurations and deliver them to your delivery channel.

For information about creating an IAM role and attaching the required policies to the IAM role, see Step 3: Creating an IAM Role.

> **Note**
>
> To find the ARN of an existing IAM role, go to the IAM console at https://console.aws.amazon.com/iam/. Choose **Roles** in the navigation pane. Then choose the name of the desired role and find the ARN at the top of the **Summary** page.

Updating the IAM Role

You can update your IAM role using the AWS Management Console or the AWS CLI.

To update the IAM role (Console)

1. Sign in to the AWS Management Console and open the AWS Config console at https://console.aws.amazon.com/config/home.
2. Choose **Settings** in the navigation pane.

3. On the **Customer managed recorder** tab, choose **Edit** on the Settings page.
4. In the **Data governance**, section, choose the IAM role for AWS Config:
   - **Use an existing AWS Config service-linked role** – AWS Config creates a role that has the required permissions.
   - **Choose a role from your account** – For **Existing roles**, choose an IAM role in your account.
5. Choose **Save**.

To update the IAM role (AWS CLI)

Use the `put-configuration-recorder` command and specify the Amazon Resource Name (ARN) of the new role:

```
$ aws configservice put-configuration-recorder --configuration-recorder
 name=configRecorderName,roleARN=arn:aws:iam::012345678912:role/myConfigRole
```

Permissions for the Amazon S3 Bucket for the AWS Config Delivery Channel

> **Important**
>
> This page is about setting up the Amazon S3 Bucket for the AWS Config delivery channel. This page is not about the `AWS::S3::Bucket` resource type that the AWS Config configuration recorder can record.

Amazon S3 buckets and objects are private by default. Only the AWS account that created the bucket (the resource owner) has access permissions. Resource owners can grant access to other resources and users by creating access policies.

When AWS Config automatically creates an S3 bucket for you, it adds the required permissions. However, if you specify an existing S3 bucket, you must add these permissions manually.

Topics

- Required Permissions for the Amazon S3 Bucket When Using IAM Roles

- Required Permissions for the Amazon S3 Bucket When Using Service-Linked Roles
- Granting AWS Config access to the Amazon S3 Bucket
- Required Permissions for the Amazon S3 Bucket When Delivering Cross-Account

Required Permissions for the Amazon S3 Bucket When Using IAM Roles

AWS Config uses the IAM role you assigned to the configuration recorder to deliver configuration history and snapshots to S3 buckets in your account. For cross-account delivery, AWS Config first attempts to use the assigned IAM role. If the bucket policy doesn't grant `WRITE` access to the IAM role, AWS Config uses the `config.amazonaws.com` service principal. The bucket policy must grant `WRITE` access to `config.amazonaws.com` to complete the delivery. After successful delivery, AWS Config maintains ownership of all objects it delivers to the cross-account S3 bucket.

AWS Config calls the Amazon S3 HeadBucket API with the IAM role you assigned to the configuration recorder to confirm if the S3 bucket exists and its location. If you do not have the necessary permissions for AWS Config to confirm, you will see an `AccessDenied` error in your AWS CloudTrail logs. However, AWS Config can still deliver configuration history and snapshots even if AWS Config does not have the necessary permissions to confirm if the S3 bucket exists and its location.

> **Minimum permissions**
>
> The Amazon S3 `HeadBucket` API requires the `s3:ListBucket` action.

Required Permissions for the Amazon S3 Bucket When Using Service-Linked Roles

The AWS Config service-linked role does not have permission to put objects to Amazon S3 buckets. If you set up AWS Config using a service-linked role, AWS Config will use the `config.amazonaws.com` service principal to deliver configuration history and snapshots. The S3 bucket policy in your account or cross-account destinations must include permissions for the AWS Config service principal to write objects.

Granting AWS Config access to the Amazon S3 Bucket

Complete the following steps enable AWS Config to deliver configuration history and snapshots to an Amazon S3 bucket.

1. Sign in to the AWS Management Console using the account that has the S3 bucket.
2. Open the Amazon S3 console at https://console.aws.amazon.com/s3/.
3. Select the bucket that you want AWS Config to use to deliver configuration items, and then choose **Properties**.
4. Choose **Permissions**.
5. Choose **Edit Bucket Policy**.
6. Copy the following policy into the **Bucket Policy Editor** window:

> **Security best practices**
>
> We strongly recommend that you restrict access in the bucket policy with the `AWS:SourceAccount` condition. This makes sure that AWS Config is granted access on behalf of expected users only.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AWSConfigBucketPermissionsCheck",
      "Effect": "Allow",
      "Principal": {
        "Service": "config.amazonaws.com"
      },
      "Action": "s3:GetBucketAcl",
      "Resource": "arn:aws:s3:::amzn-s3-demo-bucket",
      "Condition": {
        "StringEquals": {
          "AWS:SourceAccount": "sourceAccountID"
        }
      }
    },
    {
      "Sid": "AWSConfigBucketExistenceCheck",
      "Effect": "Allow",
      "Principal": {
        "Service": "config.amazonaws.com"
      },
      "Action": "s3:ListBucket",
```

```
      "Resource": "arn:aws:s3:::amzn-s3-demo-bucket",
      "Condition": {
        "StringEquals": {
          "AWS:SourceAccount": "sourceAccountID"
        }
      }
    },
    {
      "Sid": "AWSConfigBucketDelivery",
      "Effect": "Allow",
      "Principal": {
        "Service": "config.amazonaws.com"
      },
      "Action": "s3:PutObject",
      "Resource": "arn:aws:s3:::amzn-s3-demo-bucket/[optional] prefix/
AWSLogs/sourceAccountID/Config/*",
      "Condition": {
        "StringEquals": {
          "s3:x-amz-acl": "bucket-owner-full-control",
          "AWS:SourceAccount": "sourceAccountID"
        }
      }
    }
  ]
}
```

7. Substitute the following values in the bucket policy:

   - *amzn-s3-demo-bucket* – Name of the Amazon S3 bucket where AWS Config will deliver configuration history and snapshots.
   - *[optional] prefix* – An optional addition to the Amazon S3 object key that helps create a folder-like organization in the bucket.
   - *sourceAccountID* – ID of the account where AWS Config will deliver configuration history and snapshots.

8. Choose **Save** and then **Close**.

The `AWS:SourceAccount` condition restricts AWS Config operations to specified AWS accounts. For multi-account configurations within an organization delivering to a single S3 bucket, use IAM roles with AWS Organizations conditions keys instead of service-linked roles. For example,

`AWS:PrincipalOrgID`. For more information, see Managing access permissions for an organization in the *AWS Organizations User guide*.

The `AWS:SourceArn` condition restricts AWS Config operations to specified delivery channels. The `AWS:SourceArn` format is as follows: `arn:aws:config:`*`sourceRegion`*`:`*`123456789012`*.

For example, to restrict S3 bucket access to a delivery channel in the US East (N. Virginia) Region for account 123456789012, add the following condition:

```
"ArnLike": {"AWS:SourceArn": "arn:aws:config:us-east-1:123456789012:"}
```

Required Permissions for the Amazon S3 Bucket When Delivering Cross-Account

When AWS Config is configured to deliver configuration history and snapshots to an Amazon S3 bucket in a different account (cross-account setup), where the configuration recorder and the S3 bucket specified for delivery channel are in different AWS accounts, the following permissions are required:

- The IAM role you assign to the configuration recorder needs explicit permission to perform the `s3:ListBucket` operation. This is because AWS Config calls the Amazon S3 HeadBucket API with this IAM role to determine the bucket location.
- The S3 bucket policy must include permissions for both the AWS Config service principal and the IAM role assigned to the configuration recorder.

The following is an example bucket policy configuration:

```
{
      "Sid": "AWSConfigBucketExistenceCheck",
      "Effect": "Allow",
      "Principal": {
        "Service": "config.amazonaws.com",
        "AWS": "IAM Role-Arn assigned to the configuration recorder"
      },
      "Action": "s3:ListBucket",
      "Resource": "arn:aws:s3:::amzn-s3-demo-bucket",
      "Condition": {
        "StringEquals": {
          "AWS:SourceAccount": "sourceAccountID"
        }
```

```
        }
}
```

Permissions for the KMS Key for the AWS Config Delivery Channel

Use the information in this topic if you want to create a policy for an AWS KMS key for your S3 bucket that allows you to use KMS-based encryption on objects delivered by AWS Config for S3 bucket delivery.

Contents

- Required Permissions for the KMS Key When Using IAM Roles (S3 Bucket Delivery)
- Required Permissions for the AWS KMS Key When Using Service-Linked Roles (S3 Bucket Delivery)
- Granting AWS Config access to the AWS KMS Key

Required Permissions for the KMS Key When Using IAM Roles (S3 Bucket Delivery)

If you set up AWS Config using an IAM role, you can attach the follow permission policy to the KMS Key:

```
{
    "Id": "Policy_ID",
    "Statement": [
        {
            "Sid": "AWSConfigKMSPolicy",
            "Action": [
                "kms:Decrypt",
                "kms:GenerateDataKey"
            ],
            "Effect": "Allow",
            "Resource": "*myKMSKeyARN*",
            "Principal": {
                "AWS": [
                    "account-id1",
                    "account-id2",
                    "account-id3"
                ]
            }
        }
```

```
    ]
}
```

> **Note**
>
> If the IAM role, Amazon S3 bucket policy, or AWS KMS key do not provide appropriate access to AWS Config, then AWS Config's attempt to send configuration information to the Amazon S3 bucket will fail. In this event, AWS Config sends the information again, this time as the AWS Config service principal. For this case, you must attach a permission policy, mentioned below, to the AWS KMS key to grant AWS Config access to use the key when delivering information to the Amazon S3 bucket.

Required Permissions for the AWS KMS Key When Using Service-Linked Roles (S3 Bucket Delivery)

The AWS Config service-linked role does not have permission to access the AWS KMS key. So, if you set up AWS Config using a service-linked role, AWS Config will send information as the AWS Config service principal instead. You will need to attach an access policy, mentioned below, to the AWS KMS key to grant AWS Config access to use the AWS KMS key when delivering information to the Amazon S3 bucket.

Granting AWS Config access to the AWS KMS Key

This policy allows AWS Config to use an AWS KMS key when delivering information to an Amazon S3 bucket

```
{
    "Id": "Policy_ID",
    "Statement": [
        {
            "Sid": "AWSConfigKMSPolicy",
            "Effect": "Allow",
            "Principal": {
                "Service": "config.amazonaws.com"
            },
            "Action": [
                "kms:Decrypt",
                "kms:GenerateDataKey"
```

```
            ],
            "Resource": "myKMSKeyARN",
            "Condition": {
                "StringEquals": {
                    "AWS:SourceAccount": "sourceAccountID"
                }
            }
        }
    ]
}
```

Substitute the following values in the key policy:

- *myKMSKeyARN* – The ARN of the AWS KMS key used to encrypt data in the Amazon S3 bucket that AWS Config will deliver configuration items to.
- *sourceAccountID* – The ID of the account for which AWS Config will deliver configuration items to.

You can use the `AWS:SourceAccount` condition in the AWS KMS key policy above to restrict the Config service principal to only interact with the AWS KMS key when performing operations on behalf of specific accounts.

AWS Config also supports the `AWS:SourceArn` condition which restricts the Config service principal to only interact with the Amazon S3 bucket when performing operations on behalf of specific AWS Config delivery channels. When using the AWS Config service principal, the `AWS:SourceArn` property will always be set to `arn:aws:config:sourceRegion:sourceAccountID:*` where `sourceRegion` is the region of the delivery channel and `sourceAccountID` is the ID of the account containing the delivery channel. For more information on AWS Config delivery channels, see Managing the Delivery Channel. For example, add the following condition to restrict the Config service principal to interact with your Amazon S3 bucket only on behalf of a delivery channel in the `us-east-1` region in the account `123456789012`: `"ArnLike": {"AWS:SourceArn": "arn:aws:config:us-east-1:123456789012:*"}`.

Permissions for the Amazon SNS Topic

This topic describes how to configure AWS Config to deliver Amazon SNS topics owned by a different account. AWS Config must have the required permissions to send notifications to an Amazon SNS topic.

When the AWS Config console creates a new Amazon SNS topic for you, AWS Config grants the necessary permissions. If you choose an existing Amazon SNS topic, makes sure that the Amazon SNS topic includes the required permissions and follows security best practices.

> **Cross-Region Amazon SNS topics are not supported**
>
> AWS Config currently supports only access within the same AWS Region and across accounts.

Contents

- Required Permissions for the Amazon SNS Topic When Using IAM Roles
- Required Permissions for the Amazon SNS Topic When Using Service-Linked Roles
- Granting AWS Config access to the Amazon SNS topic
- Troubleshooting for the Amazon SNS Topic

Required Permissions for the Amazon SNS Topic When Using IAM Roles

You can attach a permissions policy to the Amazon SNS topic owned by a different account. If you want to use an Amazon SNS topic from another account, make sure to attach the following policy to the existing Amazon SNS topic.

```
{
  "Id": "Policy_ID",
  "Statement": [
    {
      "Sid": "AWSConfigSNSPolicy",
      "Action": [
        "sns:Publish"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:sns:region:account-id:myTopic",
      "Principal": {
        "AWS": [
          "account-id1",
          "account-id2",
          "account-id3"
        ]
      }
```

```
    }
  ]
}
```

For the `Resource` key, *`account-id`* is the AWS account number of the topic owner. For *`account-id1`*, *`account-id2`*, and *`account-id3`*, use the AWS accounts that will send data to an Amazon SNS topic. You can substitute appropriate values for *`region`* and *`myTopic`*.

When AWS Config sends a notification to an Amazon SNS topic, it first attempts to use the IAM role, but this attempt fails if the role or AWS account does not have permission to publish to the topic. In this event, AWS Config sends the notification again, this time as an AWS Config service principal name (SPN). Before the publication can succeed, the access policy for the topic must grant `sns:Publish` access to the `config.amazonaws.com` principal name. You must attach an access policy, described in the next section, to the Amazon SNS topic to grant AWS Config access to the Amazon SNS topic if the IAM role does not have permission to publish to the topic.

Required Permissions for the Amazon SNS Topic When Using Service-Linked Roles

The AWS Config service-linked role does not have permission to access the Amazon SNS topic. So, if you set up AWS Config using a service-linked role (SLR), AWS Config will send information as the AWS Config service principal instead. You will need to attach an access policy, mentioned below, to the Amazon SNS topic to grant AWS Config access to send information to the Amazon SNS topic.

For same-account setup, when the Amazon SNS topic and SLR are in the same account and the Amazon SNS policy grants the SLR "`sns:Publish`" permission, you do not need to use the AWS Config SPN. The permissions policy below and security best practice recommendations are for cross-account setup.

Granting AWS Config access to the Amazon SNS topic

This policy allows AWS Config to send a notification to an Amazon SNS topic. To grant AWS Config access to the Amazon SNS topic from another account, you will need to attach the following permissions policy.

> **Note**
>
> As a security best practice, it is strongly recommended to make sure AWS Config is accessing resources on behalf of expected users only by restricting access to the accounts listed in `AWS:SourceAccount` condition.

```
{
"Id": "Policy_ID",
"Statement": [
  {
    "Sid": "AWSConfigSNSPolicy",
    "Effect": "Allow",
    "Principal": {
      "Service": "config.amazonaws.com"
    },
    "Action": "sns:Publish",
      "Resource": "arn:aws:sns:region:account-id:myTopic",
        "Condition" : {
        "StringEquals": {
          "AWS:SourceAccount": [
            "account-id1",
            "account-id2",
            "account-id3"
          ]
        }
      }
    }
  ]
}
```

For the `Resource` key, *`account-id`* is the AWS account number of the topic owner. For *`account-id1`*, *`account-id2`*, and *`account-id3`*, use the AWS accounts that will send data to an Amazon SNS topic. You can substitute appropriate values for *`region`* and *`myTopic`*.

You can use the `AWS:SourceAccount` condition in the previous Amazon SNS topic policy to restrict the AWS Config service principal name (SPN) to interact only with the Amazon SNS topic when performing operations on behalf of specific accounts.

AWS Config also supports the `AWS:SourceArn` condition which restricts the AWS Config service principal name (SPN) to only interact with the S3 bucket when performing operations on behalf of specific AWS Config delivery channels. When using the AWS Config service principal name (SPN), the `AWS:SourceArn` property will always be set to `arn:aws:config:sourceRegion:sourceAccountID:*` where `sourceRegion` is the Region of the delivery channel and `sourceAccountID` is the ID of the account containing the delivery channel. For more information about AWS Config delivery channels, see Managing the Delivery Channel. For example, add the following condition to restrict the AWS Config service principal name (SPN) to interact with your S3 bucket only on behalf of a delivery channel in

the `us-east-1` Region in the account `123456789012`: `"ArnLike": {"AWS:SourceArn": "arn:aws:config:us-east-1:123456789012:*"}`.

Troubleshooting for the Amazon SNS Topic

AWS Config must have permissions to send notifications to an Amazon SNS topic. If an Amazon SNS topic cannot receive notifications, verify that the IAM role that AWS Config was assuming has the required `sns:Publish` permissions.

Troubleshooting AWS Config identity and access

Use the following information to help you diagnose and fix common issues that you might encounter when working with AWS Config and IAM.

Topics

- I am not authorized to perform an action in AWS Config
- I am not authorized to perform iam:PassRole
- I want to allow people outside of my AWS account to access my AWS Config resources

I am not authorized to perform an action in AWS Config

If you receive an error that you're not authorized to perform an action, your policies must be updated to allow you to perform the action.

The following example error occurs when the `mateojackson` IAM user tries to use the console to view details about a fictional *`my-example-widget`* resource but does not have the fictional `config:`*`GetWidget`* permissions.

```
User: arn:aws:iam::123456789012:user/mateojackson is not authorized to perform:
 config:GetWidget on resource: my-example-widget
```

In this case, Mateo's policy must be updated to allow him to access the *`my-example-widget`* resource using the `config:`*`GetWidget`* action.

If you need help, contact your AWS administrator. Your administrator is the person who provided you with your sign-in credentials.

I am not authorized to perform iam:PassRole

If you receive an error that you're not authorized to perform the `iam:PassRole` action, your policies must be updated to allow you to pass a role to AWS Config.

Some AWS services allow you to pass an existing role to that service instead of creating a new service role or service-linked role. To do this, you must have permissions to pass the role to the service.

The following example error occurs when an IAM user named `marymajor` tries to use the console to perform an action in AWS Config. However, the action requires the service to have permissions that are granted by a service role. Mary does not have permissions to pass the role to the service.

```
User: arn:aws:iam::123456789012:user/marymajor is not authorized to perform:
 iam:PassRole
```

In this case, Mary's policies must be updated to allow her to perform the `iam:PassRole` action.

If you need help, contact your AWS administrator. Your administrator is the person who provided you with your sign-in credentials.

I want to allow people outside of my AWS account to access my AWS Config resources

You can create a role that users in other accounts or people outside of your organization can use to access your resources. You can specify who is trusted to assume the role. For services that support resource-based policies or access control lists (ACLs), you can use those policies to grant people access to your resources.

To learn more, consult the following:

- To learn whether AWS Config supports these features, see How AWS Config works with IAM.
- To learn how to provide access to your resources across AWS accounts that you own, see Providing access to an IAM user in another AWS account that you own in the *IAM User Guide*.
- To learn how to provide access to your resources to third-party AWS accounts, see Providing access to AWS accounts owned by third parties in the *IAM User Guide*.
- To learn how to provide access through identity federation, see Providing access to externally authenticated users (identity federation) in the *IAM User Guide*.

- To learn the difference between using roles and resource-based policies for cross-account access, see Cross account resource access in IAM in the *IAM User Guide*.

Using Service-Linked Roles for AWS Config

AWS Config uses AWS Identity and Access Management (IAM) service-linked roles. A service-linked role is a unique type of IAM role that is linked directly to AWS Config. Service-linked roles are predefined by AWS Config and include all the permissions that the service requires to call other AWS services on your behalf.

A service-linked role makes setting up AWS Config easier because you don't have to manually add the necessary permissions. AWS Config defines the permissions of its service-linked roles, and unless defined otherwise, only AWS Config can assume its roles. The defined permissions include the trust policy and the permissions policy, and that permissions policy cannot be attached to any other IAM entity.

For information about other services that support service-linked roles, see AWS Services That Work with IAM and look for the services that have **Yes** in the **Service-Linked Role** column. Choose a **Yes** with a link to view the service-linked role documentation for that service.

Service-Linked Role Permissions for AWS Config

AWS Config uses the service-linked role named **AwsServiceRoleForConfig** – AWS Config uses this service-linked role to call other AWS services on your behalf.

The **AwsServiceRoleForConfig** service-linked role trusts the `config.amazonaws.com` service to assume the role.

The permissions policy for the `AwsServiceRoleForConfig` role contains read-only and write-only permissions for AWS Config resources and read-only permissions for resources in other services that AWS Config supports. To view the managed policy for **AwsServiceRoleForConfig**, see AWS managed policies for AWS Config.

You must configure permissions to allow an IAM entity (such as a user, group, or role) to create, edit, or delete a service-linked role. For more information, see Service-Linked Role Permissions in the *IAM User Guide*.

To use a service-linked role with AWS Config, you must configure permissions on your Amazon S3 bucket and Amazon SNS topic. For more information, see Required Permissions for the Amazon S3 Bucket When Using Service-Linked Roles, Required Permissions for the AWS KMS Key When Using

Service-Linked Roles (S3 Bucket Delivery), and Required Permissions for the Amazon SNS Topic When Using Service-Linked Roles.

Creating a Service-Linked Role for AWS Config

In the IAM CLI or the IAM API, create a service-linked role with the `config.amazonaws.com` service name. For more information, see Creating a Service-Linked Role in the *IAM User Guide*. If you delete this service-linked role, you can use this same process to create the role again.

Editing a Service-Linked Role for AWS Config

AWS Config does not allow you to edit the **AwsServiceRoleForConfig** service-linked role. After you create a service-linked role, you cannot change the name of the role because various entities might reference the role. However, you can edit the description of the role using IAM. For more information, see Editing a Service-Linked Role in the *IAM User Guide*.

Deleting a Service-Linked Role for AWS Config

If you no longer need to use a feature or service that requires a service-linked role, we recommend that you delete that role. That way you don't have an unused entity that is not actively monitored or maintained. However, you must clean up the resources for your service-linked role before you can manually delete it.

> **Note**
>
> If the AWS Config service is using the role when you try to delete the resources, then the deletion might fail. If that happens, wait for a few minutes and try the operation again.

To delete AWS Config resources used by the AwsServiceRoleForConfig

Ensure that you do not have `ConfigurationRecorders` using the service-linked role. You can use the AWS Config console to stop the configuration recorder. To stop recording, under **Recording is on**, choose **Turn off**.

You can delete the `ConfigurationRecorder` using AWS Config API. To delete, use the `delete-configuration-recorder` command.

```
$ aws configservice delete-configuration-recorder --configuration-recorder-name default
```

To manually delete the service-linked role using IAM

Use the IAM console, the IAM CLI, or the IAM API to delete the AwsServiceRoleForConfig service-linked role. For more information, see Deleting a Service-Linked Role in the *IAM User Guide*.

Incident Response in AWS Config

Security is the highest priority at AWS. As part of the AWS Cloud shared responsibility model, AWS manages a data center, network, and software architecture that meets the requirements of the most security-sensitive organizations. AWS is responsible for any incident response with respect to the AWS Config service itself. Also, as an AWS customer, you share a responsibility for maintaining security in the cloud. This means you control the security you choose to implement from the AWS tools and features you have access to, and are responsible for incident response on your side of the shared responsibility model.

By establishing a security baseline that meets the objectives for your applications running in the cloud, you're able to detect deviations that you can respond to. Since security incident response can be a complex topic, we encourage you to review the following resources so that you are better able to understand the impact that incident response (IR) and your choices have on your corporate goals: AWS Security Incident Response Guide, AWS Security Best Practices whitepaper, and the Security Perspective of the AWS Cloud Adoption Framework (CAF) white paper.

Compliance Validation for AWS Config

Third-party auditors assess the security and compliance of AWS Config as part of multiple AWS compliance programs. These include SOC, PCI, FedRAMP, HIPAA, and others.

To learn whether an AWS service is within the scope of specific compliance programs, see AWS services in Scope by Compliance Program and choose the compliance program that you are interested in. For general information, see AWS Compliance Programs.

You can download third-party audit reports using AWS Artifact. For more information, see Downloading Reports in AWS Artifact.

Your compliance responsibility when using AWS services is determined by the sensitivity of your data, your company's compliance objectives, and applicable laws and regulations. AWS provides the following resources to help with compliance:

- Security Compliance & Governance – These solution implementation guides discuss architectural considerations and provide steps for deploying security and compliance features.
- HIPAA Eligible Services Reference – Lists HIPAA eligible services. Not all AWS services are HIPAA eligible.
- AWS Compliance Resources – This collection of workbooks and guides might apply to your industry and location.
- AWS Customer Compliance Guides – Understand the shared responsibility model through the lens of compliance. The guides summarize the best practices for securing AWS services and map the guidance to security controls across multiple frameworks (including National Institute of Standards and Technology (NIST), Payment Card Industry Security Standards Council (PCI), and International Organization for Standardization (ISO)).
- Evaluating Resources with Rules in the *AWS Config Developer Guide* – The AWS Config service assesses how well your resource configurations comply with internal practices, industry guidelines, and regulations.
- AWS Security Hub – This AWS service provides a comprehensive view of your security state within AWS. Security Hub uses security controls to evaluate your AWS resources and to check your compliance against security industry standards and best practices. For a list of supported services and controls, see Security Hub controls reference.
- Amazon GuardDuty – This AWS service detects potential threats to your AWS accounts, workloads, containers, and data by monitoring your environment for suspicious and malicious activities. GuardDuty can help you address various compliance requirements, like PCI DSS, by meeting intrusion detection requirements mandated by certain compliance frameworks.
- AWS Audit Manager – This AWS service helps you continuously audit your AWS usage to simplify how you manage risk and compliance with regulations and industry standards.

Resilience in AWS Config

The AWS global infrastructure is built around AWS Regions and Availability Zones. AWS Regions provide multiple physically separated and isolated Availability Zones, which are connected with low-latency, high-throughput, and highly redundant networking. With Availability Zones, you can design and operate applications and databases that automatically fail over between zones without interruption. Availability Zones are more highly available, fault tolerant, and scalable than traditional single or multiple data center infrastructures.

For more information about AWS Regions and Availability Zones, see AWS Global Infrastructure.

Infrastructure Security in AWS Config

As a managed service, AWS Config is protected by AWS global network security. For information about AWS security services and how AWS protects infrastructure, see AWS Cloud Security. To design your AWS environment using the best practices for infrastructure security, see Infrastructure Protection in *Security Pillar AWS Well-Architected Framework*.

You use AWS published API calls to access AWS Config through the network. Clients must support the following:

- Transport Layer Security (TLS). We require TLS 1.2 and recommend TLS 1.3.
- Cipher suites with perfect forward secrecy (PFS) such as DHE (Ephemeral Diffie-Hellman) or ECDHE (Elliptic Curve Ephemeral Diffie-Hellman). Most modern systems such as Java 7 and later support these modes.

Additionally, requests must be signed by using an access key ID and a secret access key that is associated with an IAM principal. Or you can use the AWS Security Token Service (AWS STS) to generate temporary security credentials to sign requests.

Configuration and Vulnerability Analysis

For AWS Config, AWS handles basic security tasks such as guest operating system (OS) and database patching, firewall configuration, and disaster recovery.

Cross-service confused deputy prevention

The confused deputy problem is a security issue where an entity that doesn't have permission to perform an action can coerce a more-privileged entity to perform the action. In AWS, cross-service impersonation can result in the confused deputy problem. Cross-service impersonation can occur when one service (the *calling service*) calls another service (the *called service*). The calling service can be manipulated to use its permissions to act on another customer's resources in a way it should not otherwise have permission to access. To prevent this, AWS provides tools that help you protect your data for all services with service principals that have been given access to resources in your account.

We recommend using the `aws:SourceArn` and `aws:SourceAccount` global condition context keys in resource policies to limit the permissions that AWS Config gives another service to the

resource. Use `aws:SourceArn` if you want only one resource to be associated with the cross-service access. Use `aws:SourceAccount` if you want to allow any resource in that account to be associated with the cross-service use.

The most effective way to protect against the confused deputy problem is to use the `aws:SourceArn` global condition context key with the full ARN of the resource. If you don't know the full ARN of the resource or if you are specifying multiple resources, use the `aws:SourceArn` global context condition key with wildcard characters (*) for the unknown portions of the ARN. For example, `arn:aws:servicename:*:123456789012:*`.

If the `aws:SourceArn` value does not contain the account ID, such as an Amazon S3 bucket ARN, you must use both global condition context keys to limit permissions.

The following example shows how you can use the `aws:SourceArn` and `aws:SourceAccount` global condition context keys in AWS Config to prevent the confused deputy problem: Granting AWS Config access to the Amazon S3 Bucket.

Security Best Practices for AWS Config

AWS Config provides a number of security features to consider as you develop and implement your own security policies. The following best practices are general guidelines and don’t represent a complete security solution. Because these best practices might not be appropriate or sufficient for your environment, treat them as helpful considerations rather than prescriptions.

- Leverage tagging for AWS Config, which makes is easier to manage, search for, and filter resources.
- Confirm your delivery channels have been properly set, and once confirmed, verify that AWS Config is recording properly.

For more information, see AWS Config best practices blog.

Logging and Monitoring in AWS Config

AWS Config is integrated with AWS CloudTrail, a service that provides a record of actions taken by a user, role, or an AWS service in AWS Config. Monitoring is an important part of maintaining the reliability, availability, and performance of AWS Config and your AWS solutions.

Topics

- Logging AWS Config API Calls with AWS CloudTrail
- Monitoring

Logging AWS Config API Calls with AWS CloudTrail

CloudTrail captures all API calls for AWS Config as events. The calls captured include calls from the AWS Config console and code calls to the AWS Config API operations. If you create a trail, you can enable continuous delivery of CloudTrail events to an Amazon S3 bucket, including events for AWS Config. If you don't configure a trail, you can still view the most recent events in the CloudTrail console in **Event history**. Using the information collected by CloudTrail, you can determine the request that was made to AWS Config, the IP address from which the request was made, who made the request, when it was made, and additional details.

To learn more about CloudTrail, see the AWS CloudTrail User Guide.

Topics

- AWS Config Information in CloudTrail
- Understanding AWS Config Log File Entries
- Example Log Files

AWS Config Information in CloudTrail

CloudTrail is enabled on your AWS account when you create the account. When activity occurs in AWS Config, that activity is recorded in a CloudTrail event along with other AWS service events in **Event history**. You can view, search, and download recent events in your AWS account. For more information, see Viewing Events with CloudTrail Event History.

For an ongoing record of events in your AWS account, including events for AWS Config, create a trail. A *trail* enables CloudTrail to deliver log files to an Amazon S3 bucket. By default, when you

create a trail in the console, the trail applies to all AWS Regions. The trail logs events from all Regions in the AWS partition and delivers the log files to the Amazon S3 bucket that you specify. Additionally, you can configure other AWS services to further analyze and act upon the event data collected in CloudTrail logs. For more information, see the following:

- Overview for Creating a Trail
- CloudTrail Supported Services and Integrations
- Configuring Amazon SNS Notifications for CloudTrail
- Receiving CloudTrail Log Files from Multiple Regions and Receiving CloudTrail Log Files from Multiple Accounts

All AWS Config operations are logged by CloudTrail and are documented in the AWS Config API Reference. For example, calls to the DeliverConfigSnapshot, DeleteDeliveryChannel, and DescribeDeliveryChannels operations generate entries in the CloudTrail log files.

Every event or log entry contains information about who generated the request. The identity information helps you determine the following:

- Whether the request was made with root or AWS Identity and Access Management (IAM) user credentials.
- Whether the request was made with temporary security credentials for a role or federated user.
- Whether the request was made by another AWS service.

For more information, see the CloudTrail userIdentity Element.

Understanding AWS Config Log File Entries

A trail is a configuration that enables delivery of events as log files to an Amazon S3 bucket that you specify. CloudTrail log files contain one or more log entries. An event represents a single request from any source and includes information about the requested action, the date and time of the action, request parameters, and so on. CloudTrail log files aren't an ordered stack trace of the public API calls, so they don't appear in any specific order.

Example Log Files

For examples of the CloudTrail log entries, see the following topics.

DeleteDeliveryChannel

The following is an example CloudTrail log file for the DeleteDeliveryChannel operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:32:57Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "DeleteDeliveryChannel",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "10.24.34.0",
      "userAgent": "aws-internal/3",
      "requestParameters": {
        "deliveryChannelName": "default"
      },
      "responseElements": null,
      "requestID": "207d695a-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "5dcff7a9-e414-411a-a43e-88d122a0ad4a",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

DeliverConfigSnapshot

The following is an example CloudTrail log file for the DeliverConfigSnapshot operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "AssumedRole",
        "principalId": "AIDAABCDEFGHIJKLNMOPQ:Config-API-Test",
        "arn": "arn:aws:sts::111111111111:assumed-role/JaneDoe/Config-API-Test",
        "accountId": "111111111111",
        "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
        "sessionContext": {
```

```
          "attributes": {
            "mfaAuthenticated": "false",
            "creationDate": "2014-12-11T00:58:42Z"
          },
          "sessionIssuer": {
            "type": "Role",
            "principalId": "AIDAABCDEFGHIJKLNMOPQ",
            "arn": "arn:aws:iam::111111111111:role/JaneDoe",
            "accountId": "111111111111",
            "userName": "JaneDoe"
          }
        }
      },
      "eventTime": "2014-12-11T00:58:53Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "DeliverConfigSnapshot",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "10.24.34.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
        "deliveryChannelName": "default"
      },
      "responseElements": {
        "configSnapshotId": "58d50f10-212d-4fa4-842e-97c614da67ce"
      },
      "requestID": "e0248561-80d0-11e4-9f1c-7739d36a3df2",
      "eventID": "3e88076c-eae1-4aa6-8990-86fe52aedbd8",
      "eventType": "AwsApiCall",
      recipientAccountId": "111111111111"
    }
```

DescribeConfigurationRecorderStatus

The following is an example CloudTrail log file for the DescribeConfigurationRecorderStatus operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
```

```
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:35:44Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "DescribeConfigurationRecorderStatus",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": null,
      "responseElements": null,
      "requestID": "8442f25d-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "a675b36b-455f-4e18-a4bc-d3e01749d3f1",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

DescribeConfigurationRecorders

The following is an example CloudTrail log file for the DescribeConfigurationRecorders operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:34:52Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "DescribeConfigurationRecorders",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": null,
      "responseElements": null,
      "requestID": "6566b55c-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "6259a9ad-889e-423b-beeb-6e1eec84a8b5",
      "eventType": "AwsApiCall",
```

```
      "recipientAccountId": "222222222222"
    }
```

DescribeDeliveryChannels

Following is an example CloudTrail log file for the DescribeDeliveryChannels operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:35:02Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "DescribeDeliveryChannels",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": null,
      "responseElements": null,
      "requestID": "6b6aee3f-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "3e15ebc5-bf39-4d2a-8b64-9392807985f1",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

GetResourceConfigHistory

The following is an example CloudTrail log file for the GetResourceConfigHistory operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "AssumedRole",
        "principalId": "AIDAABCDEFGHIJKLNMOPQ:Config-API-Test",
        "arn": "arn:aws:sts::111111111111:assumed-role/JaneDoe/Config-API-Test",
        "accountId": "111111111111",
        "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
```

```
        "sessionContext": {
          "attributes": {
            "mfaAuthenticated": "false",
            "creationDate": "2014-12-11T00:58:42Z"
          },
          "sessionIssuer": {
            "type": "Role",
            "principalId": "AIDAABCDEFGHIJKLNMOPQ",
            "arn": "arn:aws:iam::111111111111:role/JaneDoe",
            "accountId": "111111111111",
            "userName": "JaneDoe"
          }
        }
      },
      "eventTime": "2014-12-11T00:58:42Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "GetResourceConfigHistory",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "10.24.34.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
        "resourceId": "vpc-a12bc345",
        "resourceType": "AWS::EC2::VPC",
        "limit": 0,
        "laterTime": "Dec 11, 2014 12:58:42 AM",
        "earlierTime": "Dec 10, 2014 4:58:42 PM"
      },
      "responseElements": null,
      "requestID": "d9f3490d-80d0-11e4-9f1c-7739d36a3df2",
      "eventID": "ba9c1766-d28f-40e3-b4c6-3ffb87dd6166",
      "eventType": "AwsApiCall",
      "recipientAccountId": "111111111111"
      }
```

PutConfigurationRecorder

The following is an example CloudTrail log file for the PutConfigurationRecorder operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
```

```
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:35:23Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "PutConfigurationRecorder",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
        "configurationRecorder": {
          "name": "default",
          "roleARN": "arn:aws:iam::222222222222:role/config-role-pdx"
        }
      },
      "responseElements": null,
      "requestID": "779f7917-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "c91f3daa-96e8-44ee-8ddd-146ac06565a7",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

PutDeliveryChannel

The following is an example CloudTrail log file for the PutDeliveryChannel operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:33:08Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "PutDeliveryChannel",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
```

```
        "deliveryChannel": {
          "name": "default",
          "s3BucketName": "config-api-test-pdx",
          "snsTopicARN": "arn:aws:sns:us-west-2:222222222222:config-api-test-pdx"
        }
      },
      "responseElements": null,
      "requestID": "268b8d4d-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "b2db05f1-1c73-4e52-b238-db69c04e8dd4",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

StartConfigurationRecorder

The following is an example CloudTrail log file for the StartConfigurationRecorder operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:35:34Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "StartConfigurationRecorder",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
        "configurationRecorderName": "default"
      },
      "responseElements": null,
      "requestID": "7e03fa6a-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "55a5507f-f306-4896-afe3-196dc078a88d",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

StopConfigurationRecorder

The following is an example CloudTrail log file for the StopConfigurationRecorder operation.

```
{
      "eventVersion": "1.02",
      "userIdentity": {
        "type": "IAMUser",
        "principalId": "AIDACKCEVSQ6C2EXAMPLE",
        "arn": "arn:aws:iam::222222222222:user/JohnDoe",
        "accountId": "222222222222",
        "accessKeyId": "AKIAI44QH8DHBEXAMPLE",
        "userName": "JohnDoe"
      },
      "eventTime": "2014-12-11T18:35:13Z",
      "eventSource": "config.amazonaws.com",
      "eventName": "StopConfigurationRecorder",
      "awsRegion": "us-west-2",
      "sourceIPAddress": "192.0.2.0",
      "userAgent": "aws-cli/1.2.11 Python/2.7.4 Linux/2.6.18-164.el5",
      "requestParameters": {
        "configurationRecorderName": "default"
      },
      "responseElements": null,
      "requestID": "716deea3-8164-11e4-ab4f-657c7ab282ab",
      "eventID": "6225a85d-1e49-41e9-bf43-3cfc5549e560",
      "eventType": "AwsApiCall",
      "recipientAccountId": "222222222222"
    }
```

Monitoring

You can use other AWS services to monitor AWS Config resources.

- You can use Amazon Simple Notification Service (SNS) to send you notifications every time a supported AWS resource is created, updated, or otherwise modified as a result of user API activity.
- You can use Amazon EventBridge to detect and react to changes in the status of AWS Config events.

Topics

- Monitoring AWS Resource Changes with Amazon SQS
- Monitoring AWS Config with Amazon EventBridge

Monitoring AWS Resource Changes with Amazon SQS

AWS Config uses Amazon Simple Notification Service (SNS) to send you notifications every time a supported AWS resource is created, updated, or otherwise modified as a result of user API activity. However, you might be interested in only certain resource configuration changes. For example, you might consider it critical to know when someone modifies the configuration of a security group, but not need to know every time there is a change to tags on your Amazon EC2 instances. Or, you might want to write a program that performs specific actions when specific resources are updated. For example, you might want to start a certain workflow when a security group configuration is changed. If you want to programmatically consume the data from AWS Config in these or other ways, use an Amazon Simple Queue Service queue as the notification endpoint for Amazon SNS.

> **Note**
>
> Notifications can also come from Amazon SNS in the form of an email, a Short Message Service (SMS) message to SMS-enabled mobile phones and smartphones, a notification message to an application on a mobile device, or a notification message to one or more HTTP or HTTPS endpoints.

You can have a single SQS queue subscribe to multiple topics, whether you have one topic for each region or one topic for each account for each region. You must subscribe the queue to your desired SNS topic. (You can subscribe multiple queues to one SNS topic.) For more information, see Sending Amazon SNS Messages to Amazon SQS Queues.

Permissions for Amazon SQS

To use Amazon SQS with AWS Config, you must configure a policy that grants permissions to your account to perform all actions that are allowed on an SQS queue. The following example policy grants the account number 111122223333 and account number 444455556666 permission to send messages pertaining to each configuration change to the queue named arn:aws:sqs:us-east-2:444455556666:queue1.

```
{
  "Version": "2012-10-17",
  "Id": "Queue1_Policy_UUID",
  "Statement":
    {
       "Sid":"Queue1_SendMessage",
       "Effect": "Allow",
       "Principal": {
            "AWS": ["111122223333","444455556666"]
         },
        "Action": "sqs:SendMessage",
        "Resource": "arn:aws:sqs:us-east-2:444455556666:queue1"
     }
}
```

You must also create a policy that grants permissions for connections between an SNS topic and the SQS queue that subscribes to that topic. The following is an example policy that permits the SNS topic with the Amazon Resource Name (ARN) arn:aws:sns:us-east-2:111122223333:test-topic to perform any actions on the queue named arn:aws:sqs:us-east-2:111122223333:test-topic-queue.

> **Note**
>
> The account for the SNS topic and the SQS queue must be in the same region.

```
{
  "Version": "2012-10-17",
  "Id": "SNStoSQS",
  "Statement":
    {
      "Sid":"rule1",
      "Effect": "Allow",
      "Principal": {
        "Service": "sns.amazonaws.com"
      },
      "Action": "SQS:SendMessage",
      "Resource": "arn:aws:sqs:us-east-2:111122223333:test-topic-queue",
      "Condition" : {
        "StringEquals" : {
```

```
            "aws:SourceArn":"arn:aws:sns:us-east-2:111122223333:test-topic"
          }
        }
      }
}
```

Each policy can include statements that cover only a single queue, not multiple queues. For information about other restrictions on Amazon SQS policies, see Special Information for Amazon SQS Policies.

Monitoring AWS Config with Amazon EventBridge

Amazon EventBridge delivers a near real-time stream of system events that describe changes in AWS resources. Use Amazon EventBridge to detect and react to changes in the status of AWS Config events.

You can create a rule that runs whenever there is a state transition, or when there is a transition to one or more states that are of interest. Then, based on rules you create, Amazon EventBridge invokes one or more target actions when an event matches the values you specify in a rule. Depending on the type of event, you might want to send notifications, capture event information, take corrective action, initiate events, or take other actions.

Before you create event rules for AWS Config, however, you should do the following:

- Familiarize yourself with events, rules, and targets in EventBridge. For more information, see What Is Amazon EventBridge?
- For more information about how to get started with EventBridge and set up rules, see Getting started with Amazon EventBridge.
- Create the target or targets you will use in your event rules.

Topics

- Considerations
- Amazon EventBridge format for AWS Config
- Creating Amazon EventBridge Rule for AWS Config

Considerations

You will not receive alerts through EventBridge for the following resource types if you are not recording them with AWS Config:

- `AWS::ACM::Certificate`
- `AWS::CloudTrail::Trail`
- `AWS::CloudWatch::Alarm`
- `AWS::EC2::CustomerGateway`
- `AWS::EC2::EIP`
- `AWS::EC2::Host`
- `AWS::EC2::Instance`
- `AWS::EC2::InternetGateway`
- `AWS::EC2::NetworkAcl`
- `AWS::EC2::NetworkInterface`
- `AWS::EC2::RouteTable`
- `AWS::EC2::SecurityGroup`
- `AWS::EC2::Subnet`
- `AWS::EC2::VPC`
- `AWS::EC2::VPNConnection`
- `AWS::EC2::VPNGateway`
- `AWS::EC2::Volume`
- `AWS::ElasticLoadBalancingV2::LoadBalancer`
- `AWS::IAM::Group`
- `AWS::IAM::Policy`
- `AWS::IAM::Role`
- `AWS::IAM::User`
- `AWS::RDS::DBInstance`
- `AWS::RDS::DBSecurityGroup`
- `AWS::RDS::DBSnapshot`
- `AWS::RDS::DBSubnetGroup`
- `AWS::RDS::EventSubscription`

- `AWS::Redshift::Cluster`
- `AWS::Redshift::ClusterParameterGroup`
- `AWS::Redshift::ClusterSecurityGroup`
- `AWS::Redshift::ClusterSnapshot`
- `AWS::Redshift::ClusterSubnetGroup`
- `AWS::Redshift::EventSubscription`
- `AWS::S3::Bucket`

Amazon EventBridge format for AWS Config

The EventBridge event for AWS Config has the following format:

```
{
   "version": "0",
   "id": "cd4d811e-ab12-322b-8255-872ce65b1bc8",
   "detail-type": "event type",
   "source": "aws.config",
   "account": "111122223333",
   "time": "2018-03-22T00:38:11Z",
   "region": "us-east-1",
   "resources": [
      resources
   ],
   "detail": {
      specific message type
   }
}
```

Creating Amazon EventBridge Rule for AWS Config

Use the following steps to create an EventBridge rule that triggers on an event emitted by AWS Config. Events are emitted on a best effort basis.

1. In the navigation pane, choose **Rules**.
2. Choose **Create rule**.
3. Enter a name and description for the rule.

A rule can't have the same name as another rule in the same Region and on the same event bus.

> **Note**
>
> An event bus receives events from a source, uses rules to evaluate them, applies any configured input transformation, and routes them to the appropriate target(s). Your account's default event bus receives events from AWS services. A custom event bus can receive events from your custom applications and services. A partner event bus receives events from an event source created by an SaaS partner. These events come from the partners services or applications. For more information, see Event buses in Amazon EventBridge in the *Amazon EventBridge User Guide*.

4. For **Rule type**, choose **Rule with an event pattern**.
5. For **Event source**, choose **AWS events or EventBridge partner events**.
6. (Optional) For **Sample event type**, choose **AWS events**.
7. (Optional) For **Sample events**, choose the event type that triggers the rule:
   - Choose **AWS API Call from CloudTrail** to base rules on API calls made to this service. For more information about creating this type of rule, see Tutorial: Create an Amazon EventBridge rule for AWS CloudTrail API calls.
   - Choose **Config Configuration Item Change** to get notifications when a resource in your account changes.

     As described in these support articles, you can use EventBridge to receive custom email notifications when a resource is created or deleted, How can I receive custom email notifications when a resource is created in my AWS account using AWS Config service? and How can I receive custom email notifications when a resource is deleted in my AWS account using AWS Config service?.
   - Choose **Config Rules Compliance Change** to get notifications when a compliance check to your rules fails.

     As described in this support article, you can use EventBridge to receive custom email notifications when a resource is noncompliant, How can I be notified when an AWS resource is noncompliant using AWS Config?.
   - Choose **Config Rules Re-evaluation Status** to get reevaluation status notifications.

- Choose **Config Configuration Snapshot Delivery Status** to get configuration snapshot delivery status notifications.
- Choose **Config Configuration History Delivery Status** to get configuration history delivery status notifications.

8. For **Creation method**, choose **Use pattern form**.
9. For **Event source**, choose **AWS services**.
10. For **AWS service**, choose **Config**.
11. For **Event type**, choose the event type that triggers the rule:

- Choose **All Events** to make a rule that applies to all AWS services. If you choose this option, you cannot choose specific message types, rule names, resource types, or resource IDs.
- Choose **AWS API Call from CloudTrail** to base rules on API calls made to this service. For more information about creating this type of rule, see Tutorial: Create an Amazon EventBridge rule for AWS CloudTrail API calls.
- Choose **Config Configuration Item Change** to get notifications when a resource in your account changes.

  As described in these support articles, you can use EventBridge to receive custom email notifications when a resource is created or deleted, How can I receive custom email notifications when a resource is created in my AWS account using AWS Config service? and How can I receive custom email notifications when a resource is deleted in my AWS account using AWS Config service?.
- Choose **Config Rules Compliance Change** to get notifications when a compliance check to your rules fails.

  As described in this support article, you can use EventBridge to receive custom email notifications when a resource is noncompliant, How can I be notified when an AWS resource is noncompliant using AWS Config?.
- Choose **Config Rules Re-evaluation Status** to get reevaluation status notifications.
- Choose **Config Configuration Snapshot Delivery Status** to get configuration snapshot delivery status notifications.
- Choose **Config Configuration History Delivery Status** to get configuration history delivery status notifications.

12. Choose **Any message type** to receive notifications of any type. Choose **Specific message type(s)** to receive the following types of notifications:

- If you choose **ConfigurationItemChangeNotification**, you receive messages when the configuration of a resource that AWS Config evaluates has changed.
- If you choose **ComplianceChangeNotification**, you receive messages when the compliance type of a resource that AWS Config evaluates has changed.
- If you choose **ConfigRulesEvaluationStarted**, you receive messages when AWS Config starts evaluating your rule against the specified resources.
- If you choose **ConfigurationSnapshotDeliveryCompleted**, you receive messages when AWS Config successfully delivers the configuration snapshot to your Amazon S3 bucket.
- If you choose **ConfigurationSnapshotDeliveryFailed**, you receive messages when AWS Config fails to deliver the configuration snapshot to your Amazon S3 bucket.
- If you choose **ConfigurationSnapshotDeliveryStarted**, you receive messages when AWS Config starts delivering the configuration snapshot to your Amazon S3 bucket.
- If you choose **ConfigurationHistoryDeliveryCompleted**, you receive messages when AWS Config successfully delivers the configuration history to your Amazon S3 bucket.

13. If you chose a specific event type from the **Event Type** dropdown list, choose **Any resource type** to make a rule that applies to all AWS Config supported resource types.

    Or choose **Specific resource type(s)**, and then type the AWS Config supported resource type (for example, `AWS::EC2::Instance`).

14. If you chose a specific event type from the **Event Type** dropdown list, choose **Any resource ID** to include any AWS Config supported resource ID.

    Or choose **Specific resource ID(s)**, and then type the AWS Config supported resource ID (for example, `i-04606de676e635647`).

15. If you chose a specific event type from the **Event Type** dropdown list, choose **Any rule name** to include any AWS Config supported rule.

    Or choose **Specific rule name(s)**, and then type the AWS Config supported rule (for example, **required-tags**).

16. For **Select target(s)**, choose the type of target you have prepared to use with this rule, and then configure any additional options required by that type.

17. The fields displayed vary depending on the service you choose. Enter information specific to this target type as needed.

18. For many target types, EventBridge needs permissions to send events to the target. In these cases, EventBridge can create the IAM role needed for your rule to run.

- To create an IAM role automatically, choose **Create a new role for this specific resource**.
- To use an IAM role that you created earlier, choose **Use existing role**.

19. (Optional) Choose **Add target** to add another target for this rule.
20. (Optional) Enter one or more tags for the rule. For more information, see Amazon EventBridge tags.
21. Review your rule setup to make sure it meets your event-monitoring requirements.
22. Choose **Create** to confirm your selection.

Using AWS Config with Interface Amazon VPC Endpoints

If you use Amazon Virtual Private Cloud (Amazon VPC) to host your AWS resources, you can establish a private connection between your VPC and AWS Config. You can use this connection to communicate with AWS Config from your VPC without going through the public internet.

Amazon VPC is an AWS service that you can use to launch AWS resources in a virtual network that you define. With a VPC, you have control over your network settings, such the IP address range, subnets, route tables, and network gateways. Interface VPC endpoints are powered by AWS PrivateLink, an AWS technology that enables private communication between AWS services using an elastic network interface with private IP addresses. To connect your VPC to AWS Config, you define an *interface VPC endpoint* for AWS Config. This type of endpoint enables you to connect your VPC to AWS services. The endpoint provides reliable, scalable connectivity to AWS Config without requiring an internet gateway, network address translation (NAT) instance, or VPN connection. For more information, see What is Amazon VPC in the *Amazon VPC User Guide*.

The following steps are for users of Amazon VPC. For more information, see Getting Started in the *Amazon VPC User Guide*.

Create a VPC Endpoint for AWS Config

To start using AWS Config with your VPC, create an interface VPC endpoint for AWS Config. You do not need to change the settings for AWS Config. AWS Config calls other AWS services using their public endpoints. For more information, see Creating an Interface Endpoint in the *Amazon VPC User Guide*.

Frequently Asked Questions

Unable to see my latest configuration changes

Can I expect to view my configuration changes right away?

AWS Config usually records configuration changes to your resources right after a change is detected, or at the frequency that you specify. However, this is on a best effort basis and can take longer at times. If issues persist after sometime, contact Support and provide your AWS Config metrics that are supported by Amazon CloudWatch. For information about these metrics, see AWS Config Usage and Success Metrics.

Indirect Relationships in AWS Config

Topics

- What is resource relationship?
- What is a direct and an indirect relationship with respect to a resource?
- Which indirect relationships does AWS Config support?
- How are the configuration items created due to direct and indirect relationship?
- What are the configuration items generated due to indirect relationships?
- How do I retrieve configuration data related to indirect relationships?

What is resource relationship?

In AWS, resources refer to entities that are manageable, such as an Amazon Elastic Compute Cloud (Amazon EC2) instance, an AWS CloudFormation stack, or an Amazon S3 bucket. AWS Config is a service that tracks and monitors resources by creating configuration items (CIs) whenever a change to a recorded resource type is detected, or at the recording frequency that you set. For instance, when AWS Config is set up to track Amazon EC2 instances, it creates a configuration item every time an instance is created, updated, or deleted. Each configuration item created by AWS Config has several fields, including `accountId`, `arn` (Amazon Resource Name), `awsRegion`, `configuration`, `tags`, and `relationships`. The relationships field of a CI enables AWS Config to display how resources are linked to one another. For instance, a relationship may indicate that

an Amazon EBS volume with ID `vol-123ab45d` is attached to an Amazon EC2 instance with ID `i-a1b2c3d4`, which is associated with security group `sg-ef678hk`.

What is a direct and an indirect relationship with respect to a resource?

AWS Config derives the relationships for most resource types from the configuration field, which are called "direct" relationships. A direct relationship is a one-way connection (A→B) between a resource (A) and another resource (B), typically obtained from the describe API response of resource (A). In the past, for some resource types that AWS Config initially supported, it also captured relationships from the configurations of other resources, creating "indirect" relationships that are bidirectional (B→A). For example, the relationship between an Amazon EC2 instance and its security group is direct because the security groups are included in the describe API response for the Amazon EC2 instance. On the other hand, the relationship between a security group and an Amazon EC2 instance is indirect because describing a security group does not return any information about the instances it is associated with. As a result, when a resource configuration change is detected, AWS Config not only creates a CI for that resource, but also generates CIs for any related resources, including those with indirect relationships. For example, when AWS Config detects changes in an Amazon EC2 instance, it creates a CI for the instance and a CI for the security group that is associated with the instance.

Which indirect relationships does AWS Config support?

The following indirect resource relationships are supported in AWS Config.

Resource type	is indirectly related to the resource type		
`AWS::EC2::RouteTable`	`AWS::EC2::Instance`, `AWS::EC2::NetworkInterface`, `AWS::EC2::Subnet`, `AWS::EC2::VPNGateway`, `AWS::EC2::VPC`		

Resource type	is indirectly related to the resource type		
AWS::EC2::EIP	AWS::EC2::Instance , AWS::EC2::NetworkInterface		
AWS::EC2::Instance	AWS::EC2::Security Group ,AWS::EC2::Subnet , AWS::EC2::VPC		
AWS::EC2::NetworkInterface	AWS::EC2::Security Group , AWS::EC2::Subnet , AWS::EC2::VPC		
AWS::EC2::NetworkACL	AWS::EC2::Subnet , AWS::EC2::VPC		
AWS::EC2::VPNConnection	AWS::EC2::VPNGateway ,AWS::EC2::Customer Gateway		
AWS::EC2::Internet Gateway	AWS::EC2::VPC		
AWS::EC2::SecurityGroup	AWS::EC2::VPC		

Resource type	is indirectly related to the resource type		
AWS::EC2::Subnet	AWS::EC2::VPC		
AWS::EC2::VPNGateway	AWS::EC2::VPC		

How are the configuration items created due to direct and indirect relationship?

For a direct relationship between resources (A→B), any configuration change to the resource B will initiate a configuration item (CI) for the resource A as well. Similarly, for an indirect relationship (B→A), when there is a configuration change to resource A a new CI will be generated for resource B. For example, Amazon EC2 instance to security group is a direct relationship so any configuration change to a security group would generate a CI for the security group as well as a CI for the EC2 instance. Similarly, security group to Amazon EC2 instance is an indirect relationship so any configuration change to an EC2 instance would generate a CI for the Amazon EC2 instance as well as a CI for the security group.

What are the configuration items generated due to indirect relationships?

Below are the additional configuration items (CIs) generated due to indirect resource relationships.

Configuration changes to the following resource types	will generate CIs for the following resources types		
AWS::EC2::RouteTable	AWS::EC2::Instance ,AWS::EC2::NetworkInterface ,		

Configuration changes to the following resource types	will generate CIs for the following resources types		
	AWS::EC2::Subnet , AWS::EC2::VPNGateway , and AWS::EC2::VPC		
AWS::EC2::EIP	AWS::EC2::Instance , AWS::EC2::NetworkInterface		
AWS::EC2::Instance	AWS::EC2::SecurityGroup ,AWS::EC2::Subnet , AWS::EC2::VPC		
AWS::EC2::NetworkInterface	AWS::EC2::SecurityGroup , AWS::EC2::Subnet , AWS::EC2::VPC		
AWS::EC2::NetworkACL	AWS::EC2::Subnet , AWS::EC2::VPC		

Configuration changes to the following resource types	will generate CIs for the following resources types		
AWS::EC2::VPNConnection	AWS::EC2::VPNGateway ,AWS::EC2::CustomerGateway		
AWS::EC2::InternetGateway	AWS::EC2::VPC		
AWS::EC2::SecurityGroup	AWS::EC2::VPC		
AWS::EC2::Subnet	AWS::EC2::VPC		
AWS::EC2::VPNGateway	AWS::EC2::VPC		

How do I retrieve configuration data related to indirect relationships?

You can run Structured Query Language (SQL) queries in AWS Config Advanced Queries to retrieve configuration data related to indirect resource relationships. For example, if you want to retrieve the list of Amazon EC2 instances related to a security group, use the following query:

```
SELECT
    resourceId,
    resourceType
    WHERE
    resourceType ='AWS::EC2::Instance'
    AND
    relationships.resourceId = 'sg-234213'
```

Code examples for AWS Config using AWS SDKs

The following code examples show how to use AWS Config with an AWS software development kit (SDK).

Actions are code excerpts from larger programs and must be run in context. While actions show you how to call individual service functions, you can see actions in context in their related scenarios.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Code examples

- Basic examples for AWS Config using AWS SDKs
  - Actions for AWS Config using AWS SDKs
    - Use DeleteConfigRule with an AWS SDK or CLI
    - Use DescribeComplianceByConfigRule with a CLI
    - Use DescribeComplianceByResource with a CLI
    - Use DescribeConfigRuleEvaluationStatus with a CLI
    - Use DescribeConfigRules with an AWS SDK or CLI
    - Use DescribeConfigurationRecorderStatus with a CLI
    - Use DescribeConfigurationRecorders with a CLI
    - Use DescribeDeliveryChannels with a CLI
    - Use GetComplianceDetailsByConfigRule with a CLI
    - Use GetComplianceDetailsByResource with a CLI
    - Use GetComplianceSummaryByConfigRule with a CLI
    - Use GetComplianceSummaryByResourceType with a CLI
    - Use PutConfigRule with an AWS SDK or CLI
    - Use PutDeliveryChannel with a CLI

Basic examples for AWS Config using AWS SDKs

The following code examples show how to use the basics of AWS Config with AWS SDKs.

Examples

- Actions for AWS Config using AWS SDKs
  - Use DeleteConfigRule with an AWS SDK or CLI
  - Use DescribeComplianceByConfigRule with a CLI
  - Use DescribeComplianceByResource with a CLI
  - Use DescribeConfigRuleEvaluationStatus with a CLI
  - Use DescribeConfigRules with an AWS SDK or CLI
  - Use DescribeConfigurationRecorderStatus with a CLI
  - Use DescribeConfigurationRecorders with a CLI
  - Use DescribeDeliveryChannels with a CLI
  - Use GetComplianceDetailsByConfigRule with a CLI
  - Use GetComplianceDetailsByResource with a CLI
  - Use GetComplianceSummaryByConfigRule with a CLI
  - Use GetComplianceSummaryByResourceType with a CLI
  - Use PutConfigRule with an AWS SDK or CLI
  - Use PutDeliveryChannel with a CLI

Actions for AWS Config using AWS SDKs

The following code examples demonstrate how to perform individual AWS Config actions with AWS SDKs. Each example includes a link to GitHub, where you can find instructions for setting up and running the code.

The following examples include only the most commonly used actions. For a complete list, see the AWS Config API Reference.

Examples

- Use DeleteConfigRule with an AWS SDK or CLI
- Use DescribeComplianceByConfigRule with a CLI
- Use DescribeComplianceByResource with a CLI
- Use DescribeConfigRuleEvaluationStatus with a CLI
- Use DescribeConfigRules with an AWS SDK or CLI
- Use DescribeConfigurationRecorderStatus with a CLI

- Use DescribeConfigurationRecorders with a CLI
- Use DescribeDeliveryChannels with a CLI
- Use GetComplianceDetailsByConfigRule with a CLI
- Use GetComplianceDetailsByResource with a CLI
- Use GetComplianceSummaryByConfigRule with a CLI
- Use GetComplianceSummaryByResourceType with a CLI
- Use PutConfigRule with an AWS SDK or CLI
- Use PutDeliveryChannel with a CLI

Use `DeleteConfigRule` with an AWS SDK or CLI

The following code examples show how to use `DeleteConfigRule`.

CLI

AWS CLI

To delete an AWS Config rule

The following command deletes an AWS Config rule named `MyConfigRule`:

```
aws configservice delete-config-rule --config-rule-name MyConfigRule
```

- For API details, see DeleteConfigRule in *AWS CLI Command Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
```

```
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client


    def delete_config_rule(self, rule_name):
        """
        Delete the specified rule.

        :param rule_name: The name of the rule to delete.
        """
        try:
            self.config_client.delete_config_rule(ConfigRuleName=rule_name)
            logger.info("Deleted rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't delete rule %s.", rule_name)
            raise
```

- For API details, see DeleteConfigRule in *AWS SDK for Python (Boto3) API Reference*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeComplianceByConfigRule` with a CLI

The following code examples show how to use `DescribeComplianceByConfigRule`.

CLI

AWS CLI

To get compliance information for your AWS Config rules

The following command returns compliance information for each AWS Config rule that is violated by one or more AWS resources:

```
aws configservice describe-compliance-by-config-rule --compliance-
types NON_COMPLIANT
```

In the output, the value for each `CappedCount` attribute indicates how many resources do not comply with the related rule. For example, the following output indicates that 3 resources do not comply with the rule named `InstanceTypesAreT2micro`.

Output:

```
{
    "ComplianceByConfigRules": [
        {
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            },
            "ConfigRuleName": "InstanceTypesAreT2micro"
        },
        {
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 10,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            },
            "ConfigRuleName": "RequiredTagsForVolumes"
        }
    ]
}
```

- For API details, see DescribeComplianceByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example retrieves compliances details for the rule ebs-optimized-instance, for which there is no current evaluation results for the rule, hence it returns INSUFFICIENT_DATA

```
(Get-CFGComplianceByConfigRule -ConfigRuleName ebs-optimized-instance).Compliance
```

Output:

```
ComplianceContributorCount ComplianceType
------------------------- --------------
                           INSUFFICIENT_DATA
```

Example 2: This example returns the number of non-compliant resources for the rule ALB_HTTP_TO_HTTPS_REDIRECTION_CHECK.

```
(Get-CFGComplianceByConfigRule -ConfigRuleName
 ALB_HTTP_TO_HTTPS_REDIRECTION_CHECK -ComplianceType
 NON_COMPLIANT).Compliance.ComplianceContributorCount
```

Output:

```
CapExceeded CappedCount
----------- -----------
False       2
```

- For API details, see DescribeComplianceByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeComplianceByResource` with a CLI

The following code examples show how to use `DescribeComplianceByResource`.

CLI

AWS CLI

To get compliance information for your AWS resources

The following command returns compliance information for each EC2 instance that is recorded by AWS Config and that violates one or more rules:

```
aws configservice describe-compliance-by-resource --resource-
type AWS::EC2::Instance --compliance-types NON_COMPLIANT
```

In the output, the value for each `CappedCount` attribute indicates how many rules the resource violates. For example, the following output indicates that instance `i-1a2b3c4d` violates 2 rules.

Output:

```
{
    "ComplianceByResources": [
        {
            "ResourceType": "AWS::EC2::Instance",
            "ResourceId": "i-1a2b3c4d",
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 2,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            }
        },
        {
            "ResourceType": "AWS::EC2::Instance",
            "ResourceId": "i-2a2b3c4d ",
            "Compliance": {
                "ComplianceContributorCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceType": "NON_COMPLIANT"
            }
        }
```

```
    ]
}
```

- For API details, see DescribeComplianceByResource in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example checks the `AWS::SSM::ManagedInstanceInventory` resource type for 'COMPLIANT' compliance type.

```
Get-CFGComplianceByResource -ComplianceType COMPLIANT -ResourceType
 AWS::SSM::ManagedInstanceInventory
```

Output:

```
Compliance                              ResourceId          ResourceType
----------                              ----------          ------------
Amazon.ConfigService.Model.Compliance i-0123bcf4b567890e3
 AWS::SSM::ManagedInstanceInventory
Amazon.ConfigService.Model.Compliance i-0a1234f6f5d6b78f7
 AWS::SSM::ManagedInstanceInventory
```

- For API details, see DescribeComplianceByResource in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeConfigRuleEvaluationStatus` with a CLI

The following code examples show how to use `DescribeConfigRuleEvaluationStatus`.

CLI

AWS CLI

To get status information for an AWS Config rule

The following command returns the status information for an AWS Config rule named `MyConfigRule`:

```
aws configservice describe-config-rule-evaluation-status --config-rule-
names MyConfigRule
```

Output:

```
{
    "ConfigRulesEvaluationStatus": [
        {
            "ConfigRuleArn": "arn:aws:config:us-east-1:123456789012:config-rule/
config-rule-abcdef",
            "FirstActivatedTime": 1450311703.844,
            "ConfigRuleId": "config-rule-abcdef",
            "LastSuccessfulInvocationTime": 1450314643.156,
            "ConfigRuleName": "MyConfigRule"
        }
    ]
}
```

- For API details, see DescribeConfigRuleEvaluationStatus in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns the status information for the given config rules.

```
Get-CFGConfigRuleEvaluationStatus -ConfigRuleName root-account-mfa-enabled, vpc-
flow-logs-enabled
```

Output:

```
ConfigRuleArn                : arn:aws:config:eu-west-1:123456789012:config-rule/
config-rule-kvq1wk
ConfigRuleId                 : config-rule-kvq1wk
ConfigRuleName               : root-account-mfa-enabled
FirstActivatedTime           : 8/27/2019 8:05:17 AM
FirstEvaluationStarted       : True
LastErrorCode                :
```

```
LastErrorMessage             :
LastFailedEvaluationTime     : 1/1/0001 12:00:00 AM
LastFailedInvocationTime     : 1/1/0001 12:00:00 AM
LastSuccessfulEvaluationTime : 12/13/2019 8:12:03 AM
LastSuccessfulInvocationTime : 12/13/2019 8:12:03 AM

ConfigRuleArn                : arn:aws:config:eu-west-1:123456789012:config-rule/
config-rule-z1s23b
ConfigRuleId                 : config-rule-z1s23b
ConfigRuleName               : vpc-flow-logs-enabled
FirstActivatedTime           : 8/14/2019 6:23:44 AM
FirstEvaluationStarted       : True
LastErrorCode                :
LastErrorMessage             :
LastFailedEvaluationTime     : 1/1/0001 12:00:00 AM
LastFailedInvocationTime     : 1/1/0001 12:00:00 AM
LastSuccessfulEvaluationTime : 12/13/2019 7:12:01 AM
LastSuccessfulInvocationTime : 12/13/2019 7:12:01 AM
```

- For API details, see DescribeConfigRuleEvaluationStatus in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeConfigRules` with an AWS SDK or CLI

The following code examples show how to use `DescribeConfigRules`.

CLI

AWS CLI

To get details for an AWS Config rule

The following command returns details for an AWS Config rule named `InstanceTypesAreT2micro`:

```
aws configservice describe-config-rules --config-rule-
names InstanceTypesAreT2micro
```

Output:

```
{
    "ConfigRules": [
        {
            "ConfigRuleState": "ACTIVE",
            "Description": "Evaluates whether EC2 instances are the t2.micro
 type.",
            "ConfigRuleName": "InstanceTypesAreT2micro",
            "ConfigRuleArn": "arn:aws:config:us-east-1:123456789012:config-rule/
config-rule-abcdef",
            "Source": {
                "Owner": "CUSTOM_LAMBDA",
                "SourceIdentifier": "arn:aws:lambda:us-
east-1:123456789012:function:InstanceTypeCheck",
                "SourceDetails": [
                    {
                        "EventSource": "aws.config",
                        "MessageType": "ConfigurationItemChangeNotification"
                    }
                ]
            },
            "InputParameters": "{\"desiredInstanceType\":\"t2.micro\"}",
            "Scope": {
                "ComplianceResourceTypes": [
                    "AWS::EC2::Instance"
                ]
            },
            "ConfigRuleId": "config-rule-abcdef"
        }
    ]
}
```

- For API details, see DescribeConfigRules in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample lists config rules for the account, with selected properties.

```
Get-CFGConfigRule | Select-Object ConfigRuleName, ConfigRuleId, ConfigRuleArn,
 ConfigRuleState
```

Output:

```
ConfigRuleName                                   ConfigRuleId
 ConfigRuleArn
 ConfigRuleState
--------------                                   ------------
 -------------
 ---------------
ALB_REDIRECTION_CHECK                            config-rule-12iyn3
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-12iyn3
 ACTIVE
access-keys-rotated                              config-rule-aospfr
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-aospfr
 ACTIVE
autoscaling-group-elb-healthcheck-required       config-rule-cn1f2x
 arn:aws:config-service:eu-west-1:123456789012:config-rule/config-rule-cn1f2x
 ACTIVE
```

- For API details, see DescribeConfigRules in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
```

```
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client


    def describe_config_rule(self, rule_name):
        """
        Gets data for the specified rule.

        :param rule_name: The name of the rule to retrieve.
        :return: The rule data.
        """
        try:
            response = self.config_client.describe_config_rules(
                ConfigRuleNames=[rule_name]
            )
            rule = response["ConfigRules"]
            logger.info("Got data for rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't get data for rule %s.", rule_name)
            raise
        else:
            return rule
```

- For API details, see DescribeConfigRules in *AWS SDK for Python (Boto3) API Reference*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeConfigurationRecorderStatus` with a CLI

The following code examples show how to use `DescribeConfigurationRecorderStatus`.

CLI

AWS CLI

To get status information for the configuration recorder

The following command returns the status of the default configuration recorder:

```
aws configservice describe-configuration-recorder-status
```

Output:

```
{
    "ConfigurationRecordersStatus": [
        {
            "name": "default",
            "lastStatus": "SUCCESS",
            "recording": true,
            "lastStatusChangeTime": 1452193834.344,
            "lastStartTime": 1441039997.819,
            "lastStopTime": 1441039992.835
        }
    ]
}
```

- For API details, see DescribeConfigurationRecorderStatus in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns status of the configuration recorders.

```
Get-CFGConfigurationRecorderStatus
```

Output:

```
LastErrorCode        :
LastErrorMessage     :
LastStartTime        : 10/11/2019 10:13:51 AM
LastStatus           : Success
LastStatusChangeTime : 12/31/2019 6:14:12 AM
LastStopTime         : 10/11/2019 10:13:46 AM
Name                 : default
Recording            : True
```

- For API details, see DescribeConfigurationRecorderStatus in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeConfigurationRecorders` with a CLI

The following code examples show how to use `DescribeConfigurationRecorders`.

CLI

AWS CLI

To get details about the configuration recorder

The following command returns details about the default configuration recorder:

```
aws configservice describe-configuration-recorders
```

Output:

```
{
    "ConfigurationRecorders": [
        {
            "recordingGroup": {
                "allSupported": true,
                "resourceTypes": [],
                "includeGlobalResourceTypes": true
            },
            "roleARN": "arn:aws:iam::123456789012:role/config-ConfigRole-
A1B2C3D4E5F6",
            "name": "default"
        }
    ]
}
```

- For API details, see DescribeConfigurationRecorders in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example returns the details of configuration recorders.

```
Get-CFGConfigurationRecorder | Format-List
```

Output:

```
Name           : default
RecordingGroup : Amazon.ConfigService.Model.RecordingGroup
RoleARN        : arn:aws:iam::123456789012:role/aws-service-role/
config.amazonaws.com/AWSServiceRoleForConfig
```

- For API details, see DescribeConfigurationRecorders in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `DescribeDeliveryChannels` with a CLI

The following code examples show how to use `DescribeDeliveryChannels`.

CLI

AWS CLI

To get details about the delivery channel

The following command returns details about the delivery channel:

```
aws configservice describe-delivery-channels
```

Output:

```
{
```

```
    "DeliveryChannels": [
        {
            "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
            "name": "default",
            "s3BucketName": "config-bucket-123456789012"
        }
    ]
}
```

- For API details, see DescribeDeliveryChannels in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example retrieves the delivery channel for the region and displays details.

```
Get-CFGDeliveryChannel -Region eu-west-1 | Select-Object Name, S3BucketName,
 S3KeyPrefix,
 @{N="DeliveryFrequency";E={$_.ConfigSnapshotDeliveryProperties.DeliveryFrequency}}
```

Output:

```
Name    S3BucketName               S3KeyPrefix DeliveryFrequency
----    ------------               ----------- -----------------
default config-bucket-NA my          TwentyFour_Hours
```

- For API details, see DescribeDeliveryChannels in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `GetComplianceDetailsByConfigRule` with a CLI

The following code examples show how to use `GetComplianceDetailsByConfigRule`.

CLI

AWS CLI

To get the evaluation results for an AWS Config rule

The following command returns the evaluation results for all of the resources that don't comply with an AWS Config rule named `InstanceTypesAreT2micro`:

```
aws configservice get-compliance-details-by-config-rule --config-rule-
name InstanceTypesAreT2micro --compliance-types NON_COMPLIANT
```

Output:

```
{
    "EvaluationResults": [
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314645.261,
            "ConfigRuleInvokedTime": 1450314642.948,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-2a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314645.18,
            "ConfigRuleInvokedTime": 1450314642.902,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
```

```
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-3a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314643.346,
            "ConfigRuleInvokedTime": 1450314643.124,
            "ComplianceType": "NON_COMPLIANT"
        }
    ]
}
```

- For API details, see GetComplianceDetailsByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example obtains the evaluation results for the rule access-keys-rotated and returns the output grouped by compliance-type

```
Get-CFGComplianceDetailsByConfigRule -ConfigRuleName access-keys-rotated | Group-
Object ComplianceType
```

Output:

```
Count Name                      Group
----- ----                      -----
    2 COMPLIANT                 {Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationResult}
    5 NON_COMPLIANT             {Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationResult,
 Amazon.ConfigService.Model.EvaluationRes...
```

Example 2: This example queries compliance details for the rule access-keys-rotated for COMPLIANT resources.

```
Get-CFGComplianceDetailsByConfigRule -ConfigRuleName access-
keys-rotated -ComplianceType COMPLIANT | ForEach-Object
 {$_.EvaluationResultIdentifier.EvaluationResultQualifier}
```

Output:

```
ConfigRuleName      ResourceId            ResourceType
--------------      ----------            ------------
access-keys-rotated BCAB1CDJ2LITAPVEW3JAH AWS::IAM::User
access-keys-rotated BCAB1CDJ2LITL3EHREM4Q AWS::IAM::User
```

- For API details, see GetComplianceDetailsByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `GetComplianceDetailsByResource` with a CLI

The following code examples show how to use `GetComplianceDetailsByResource`.

CLI

AWS CLI

To get the evaluation results for an AWS resource

The following command returns the evaluation results for each rule with which the EC2 instance `i-1a2b3c4d` does not comply:

```
aws configservice get-compliance-details-by-resource --resource-
type AWS::EC2::Instance --resource-id i-1a2b3c4d --compliance-types NON_COMPLIANT
```

Output:

```
{
    "EvaluationResults": [
        {
            "EvaluationResultIdentifier": {
```

```
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "InstanceTypesAreT2micro"
                }
            },
            "ResultRecordedTime": 1450314643.288,
            "ConfigRuleInvokedTime": 1450314643.034,
            "ComplianceType": "NON_COMPLIANT"
        },
        {
            "EvaluationResultIdentifier": {
                "OrderingTimestamp": 1450314635.065,
                "EvaluationResultQualifier": {
                    "ResourceType": "AWS::EC2::Instance",
                    "ResourceId": "i-1a2b3c4d",
                    "ConfigRuleName": "RequiredTagForEC2Instances"
                }
            },
            "ResultRecordedTime": 1450314645.261,
            "ConfigRuleInvokedTime": 1450314642.948,
            "ComplianceType": "NON_COMPLIANT"
        }
    ]
}
```

- For API details, see GetComplianceDetailsByResource in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example evaulation results for the given resource.

```
Get-CFGComplianceDetailsByResource -ResourceId ABCD5STJ4EFGHIVEW6JAH -
ResourceType 'AWS::IAM::User'
```

Output:

```
Annotation                  :
ComplianceType              : COMPLIANT
```

```
ConfigRuleInvokedTime      : 8/25/2019 11:34:56 PM
EvaluationResultIdentifier :
 Amazon.ConfigService.Model.EvaluationResultIdentifier
ResultRecordedTime         : 8/25/2019 11:34:56 PM
ResultToken                :
```

- For API details, see GetComplianceDetailsByResource in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `GetComplianceSummaryByConfigRule` with a CLI

The following code examples show how to use `GetComplianceSummaryByConfigRule`.

CLI

AWS CLI

To get the compliance summary for your AWS Config rules

The following command returns the number of rules that are compliant and the number that are noncompliant:

```
aws configservice get-compliance-summary-by-config-rule
```

In the output, the value for each `CappedCount` attribute indicates how many rules are compliant or noncompliant.

Output:

```
{
    "ComplianceSummary": {
        "NonCompliantResourceCount": {
            "CappedCount": 3,
            "CapExceeded": false
        },
        "ComplianceSummaryTimestamp": 1452204131.493,
        "CompliantResourceCount": {
            "CappedCount": 2,
```

```
            "CapExceeded": false
        }
    }
}
```

- For API details, see GetComplianceSummaryByConfigRule in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns the number of Config rules that are non-compliant.

```
Get-CFGComplianceSummaryByConfigRule -Select
 ComplianceSummary.NonCompliantResourceCount
```

Output:

```
CapExceeded CappedCount
----------- -----------
False       9
```

- For API details, see GetComplianceSummaryByConfigRule in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `GetComplianceSummaryByResourceType` with a CLI

The following code examples show how to use `GetComplianceSummaryByResourceType`.

CLI

AWS CLI

To get the compliance summary for all resource types

The following command returns the number of AWS resources that are noncompliant and the number that are compliant:

```
aws configservice get-compliance-summary-by-resource-type
```

In the output, the value for each `CappedCount` attribute indicates how many resources are compliant or noncompliant.

Output:

```
{
    "ComplianceSummariesByResourceType": [
        {
            "ComplianceSummary": {
                "NonCompliantResourceCount": {
                    "CappedCount": 16,
                    "CapExceeded": false
                },
                "ComplianceSummaryTimestamp": 1453237464.543,
                "CompliantResourceCount": {
                    "CappedCount": 10,
                    "CapExceeded": false
                }
            }
        }
    ]
}
```

To get the compliance summary for a specific resource type

The following command returns the number of EC2 instances that are noncompliant and the number that are compliant:

```
aws configservice get-compliance-summary-by-resource-type --resource-
types AWS::EC2::Instance
```

In the output, the value for each `CappedCount` attribute indicates how many resources are compliant or noncompliant.

Output:

```
{
    "ComplianceSummariesByResourceType": [
        {
```

```
            "ResourceType": "AWS::EC2::Instance",
            "ComplianceSummary": {
                "NonCompliantResourceCount": {
                    "CappedCount": 3,
                    "CapExceeded": false
                },
                "ComplianceSummaryTimestamp": 1452204923.518,
                "CompliantResourceCount": {
                    "CappedCount": 7,
                    "CapExceeded": false
                }
            }
        }
    ]
}
```

- For API details, see GetComplianceSummaryByResourceType in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This sample returns the number of resources that are compliant or noncompliant and converts the output to json.

```
Get-CFGComplianceSummaryByResourceType -Select
 ComplianceSummariesByResourceType.ComplianceSummary | ConvertTo-Json
{
  "ComplianceSummaryTimestamp": "2019-12-14T06:14:49.778Z",
  "CompliantResourceCount": {
    "CapExceeded": false,
    "CappedCount": 2
  },
  "NonCompliantResourceCount": {
    "CapExceeded": true,
    "CappedCount": 100
  }
}
```

- For API details, see GetComplianceSummaryByResourceType in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `PutConfigRule` with an AWS SDK or CLI

The following code examples show how to use `PutConfigRule`.

CLI

AWS CLI

To add an AWS managed Config rule

The following command provides JSON code to add an AWS managed Config rule:

```
aws configservice put-config-rule --config-rule file://
RequiredTagsForEC2Instances.json
```

`RequiredTagsForEC2Instances.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "RequiredTagsForEC2Instances",
  "Description": "Checks whether the CostCenter and Owner tags are applied to EC2
 instances.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
  "Source": {
    "Owner": "AWS",
    "SourceIdentifier": "REQUIRED_TAGS"
  },
  "InputParameters": "{\"tag1Key\":\"CostCenter\",\"tag2Key\":\"Owner\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because the rule is a managed rule, the `Owner` attribute is set to `AWS`, and the `SourceIdentifier` attribute is set to the rule identifier, `REQUIRED_TAGS`. For the

`InputParameters` attribute, the tag keys that the rule requires, `CostCenter` and `Owner`, are specified.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

To add a customer managed Config rule

The following command provides JSON code to add a customer managed Config rule:

```
aws configservice put-config-rule --config-rule file://
InstanceTypesAreT2micro.json
```

`InstanceTypesAreT2micro.json` is a JSON file that contains the rule configuration:

```
{
  "ConfigRuleName": "InstanceTypesAreT2micro",
  "Description": "Evaluates whether EC2 instances are the t2.micro type.",
  "Scope": {
    "ComplianceResourceTypes": [
      "AWS::EC2::Instance"
    ]
  },
  "Source": {
    "Owner": "CUSTOM_LAMBDA",
    "SourceIdentifier": "arn:aws:lambda:us-
east-1:123456789012:function:InstanceTypeCheck",
    "SourceDetails": [
      {
        "EventSource": "aws.config",
        "MessageType": "ConfigurationItemChangeNotification"
      }
    ]
  },
  "InputParameters": "{\"desiredInstanceType\":\"t2.micro\"}"
}
```

For the `ComplianceResourceTypes` attribute, this JSON code limits the scope to resources of the `AWS::EC2::Instance` type, so AWS Config will evaluate only EC2 instances against the rule. Because this rule is a customer managed rule, the `Owner` attribute is set to `CUSTOM_LAMBDA`, and the `SourceIdentifier` attribute is set to the ARN of the AWS

Lambda function. The `SourceDetails` object is required. The parameters that are specified for the `InputParameters` attribute are passed to the AWS Lambda function when AWS Config invokes it to evaluate resources against the rule.

If the command succeeds, AWS Config returns no output. To verify the rule configuration, run the describe-config-rules command, and specify the rule name.

- For API details, see PutConfigRule in *AWS CLI Command Reference*.

Python

SDK for Python (Boto3)

> **Note**
>
> There's more on GitHub. Find the complete example and learn how to set up and run in the AWS Code Examples Repository.

```
class ConfigWrapper:
    """
    Encapsulates AWS Config functions.
    """

    def __init__(self, config_client):
        """
        :param config_client: A Boto3 AWS Config client.
        """
        self.config_client = config_client


    def put_config_rule(self, rule_name):
        """
        Sets a configuration rule that prohibits making Amazon S3 buckets
 publicly
        readable.

        :param rule_name: The name to give the rule.
        """
        try:
            self.config_client.put_config_rule(
                ConfigRule={
```

```
                    "ConfigRuleName": rule_name,
                    "Description": "S3 Public Read Prohibited Bucket Rule",
                    "Scope": {
                        "ComplianceResourceTypes": [
                            "AWS::S3::Bucket",
                        ],
                    },
                    "Source": {
                        "Owner": "AWS",
                        "SourceIdentifier": "S3_BUCKET_PUBLIC_READ_PROHIBITED",
                    },
                    "InputParameters": "{}",
                    "ConfigRuleState": "ACTIVE",
                }
            )
            logger.info("Created configuration rule %s.", rule_name)
        except ClientError:
            logger.exception("Couldn't create configuration rule %s.", rule_name)
            raise
```

- For API details, see PutConfigRule in *AWS SDK for Python (Boto3) API Reference*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Use `PutDeliveryChannel` with a CLI

The following code examples show how to use `PutDeliveryChannel`.

CLI

AWS CLI

To create a delivery channel

The following command provides the settings for the delivery channel as JSON code:

```
aws configservice put-delivery-channel --delivery-channel file://
deliveryChannel.json
```

The `deliveryChannel.json` file specifies the delivery channel attributes:

```
{
    "name": "default",
    "s3BucketName": "config-bucket-123456789012",
    "snsTopicARN": "arn:aws:sns:us-east-1:123456789012:config-topic",
    "configSnapshotDeliveryProperties": {
        "deliveryFrequency": "Twelve_Hours"
    }
}
```

This example sets the following attributes:

`name` - The name of the delivery channel. By default, AWS Config assigns the name `default` to a new delivery channel.You cannot update the delivery channel name with the `put-delivery-channel` command. For the steps to change the name, see Renaming the Delivery Channel.`s3BucketName` - The name of the Amazon S3 bucket to which AWS Config delivers configuration snapshots and configuration history files.If you specify a bucket that belongs to another AWS account, that bucket must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon S3 Bucket.

`snsTopicARN` - The Amazon Resource Name (ARN) of the Amazon SNS topic to which AWS Config sends notifications about configuration changes.If you choose a topic from another account, the topic must have policies that grant access permissions to AWS Config. For more information, see Permissions for the Amazon SNS Topic.

`configSnapshotDeliveryProperties` - Contains the `deliveryFrequency` attribute, which sets how often AWS Config delivers configuration snapshots and how often it invokes evaluations for periodic Config rules.

If the command succeeds, AWS Config returns no output. To verify the settings of your delivery channel, run the describe-delivery-channels command.

- For API details, see PutDeliveryChannel in *AWS CLI Command Reference*.

PowerShell

Tools for PowerShell V4

Example 1: This example changes the deliveryFrequency property of an existing delivery channel.

```
Write-CFGDeliveryChannel -ConfigSnapshotDeliveryProperties_DeliveryFrequency
 TwentyFour_Hours -DeliveryChannelName default -DeliveryChannel_S3BucketName
 amzn-s3-demo-bucket -DeliveryChannel_S3KeyPrefix my
```

- For API details, see PutDeliveryChannel in *AWS Tools for PowerShell Cmdlet Reference (V4)*.

For a complete list of AWS SDK developer guides and code examples, see Using AWS Config with an AWS SDK. This topic also includes information about getting started and details about previous SDK versions.

Document History

The following table describes the important changes to the documentation for AWS Config. For notification about updates to this documentation, you can subscribe to an RSS feed.

- **API version**: 2014-11-12
- **Latest documentation update**: May 27, 2025

Change	Description	Date
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Bedrock. For more information, see AWS managed policies for AWS Config.	May 27, 2025
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon App Integrations, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Inspector, Amazon Macie, Amazon Route 53 Profiles, Amazon OpenSearch Serverless, Amazon Simple Storage Service (Amazon S3), AWS Security Hub, and Amazon SageMaker AI resource types. For more information, see Supported Resource Types.	April 30, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: redshift-serverless-default-db-name-check	April 22, 2025
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: redshift-serverless-default-admin-check	April 17, 2025

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS B2B Data Interchange, Amazon Bedrock, AWS Clean Rooms, AWS CodeConnections, AWS Direct Connect, AWS Database Migration Service (AWS DMS), Amazon CloudWatch Logs, Amazon Macie, Amazon Managed Blockchain, Amazon Q Business, Route 53 Profiles, Amazon Simple Storage Service (Amazon S3), Amazon SageMaker AI, AWS Security Hub, and AWS Systems Manager Incident Manager, AWS Systems Manager Incident Manager Contacts, and AWS Systems Manager. For more information, see AWS managed policies for AWS Config.	April 8, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • s3-bucket-tagged • ecr-repository-tagged • sagemaker-feature-group-tagged • sagemaker-domain-tagged • cognito-user-pool-tagged	April 1, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • nlb-cross-zone-load-balancing-enabled • redshift-serverless-publish-logs-to-cloudwatch • rds-instance-subnet-igw-check • ec2-spot-fleet-request-ct-encryption-at-rest • redshift-serverless-workgroup-encrypted-in-transit • redshift-serverless-workgroup-no-public-access • redshift-serverless-namespace-cmk-encryption • event-data-store-cmk-encryption-enabled • ecs-task-definition-network-mode-not-host • rds-proxy-tls-encryption • nlb-logging-enabled • redshift-audit-logging-enabled • s3-lifecycle-policy-check • sagemaker-image-tagged • redshift-cluster-parameter-group-tagged • ec2-dhcp-options-tagged • sagemaker-app-image-config-tagged	March 22, 2025

- mariadb-publish-logs-to-cloudwatch-logs
- docdb-cluster-encrypted-in-transit
- rds-sqlserver-encrypted-in-transit
- ec2-traffic-mirror-session-tagged
- ec2-launch-template-tagged
- ec2-traffic-mirror-target-tagged
- transfer-certificate-tagged
- batch-managed-compute-env-compute-resources-tagged
- lightsail-disk-tagged
- transfer-profile-tagged
- amplify-app-tagged
- ec2-prefix-list-tagged
- amplify-branch-tagged
- transfer-agreement-tagged
- datasync-task-tagged
- transfer-workflow-tagged
- sagemaker_notebook_instance_platform_version
- ec2-traffic-mirror-filter-tagged
- aurora-mysql-cluster-audit-logging
- ssm-document-tagged
- transfer-connector-tagged

- rds-mariadb-instance-encrypted-in-transit
- iam-saml-provider-tagged
- ec2-fleet-tagged
- iam-server-certificate-tagged
- iam-oidc-provider-tagged
- alb-listener-tagged
- glb-listener-tagged
- ec2-network-insights-access-scope-tagged
- lightsail-certificate-tagged
- ec2-capacity-reservation-tagged
- ec2-transit-gateway-multicast-domain-tagged
- dms-endpoint-tagged
- ec2-carrier-gateway-tagged
- dms-replication-task-tagged
- ec2-client-vpn-endpoint-tagged
- lightsail-bucket-tagged
- ec2-network-insights-access-scope-analysis-tagged
- nlb-listener-tagged
- ec2-network-insights-path-tagged

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • docdb-cluster-encrypted-in-transit • mariadb-publish-logs-to-cloudwatch-logs • aurora-mysql-cluster-audit-logging • rds-mariadb-instance-encrypted-in-transit • rds-sqlserver-encrypted-in-transit • sagemaker-notebook-instance-platform-version • appstream-fleet-multi-az • apprunner-vpc-connector-multi-az • mq-broker-general-logging-enabled • mq-active-single-instance-broker-storage-type-efs • mq-active-broker-ldap-authentication • iottwinmaker-component-type-tagged	March 19, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • fsx-openzfs-deployment-type-check • fsx-ontap-deployment-type-check • fsx-windows-deployment-type-check • redshift-serverless-workgroup-routes-within-vpc	March 18, 2025
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: ec2-instance-launched-with-allowed-ami	March 11, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • connect-instance-logging-enabled • ecr-repository-cmk-encryption-enabled • elbv2-predefined-security-policy-ssl-check • glue-spark-job-supported-version • guardduty-runtime-monitoring-enabled • guardduty-ecs-protection-runtime-enabled • guardduty-ec2-protection-runtime-enabled • netfw-subnet-change-protection-enabled • rds-sql-server-logs-to-cloudwatch • sqs-queue-no-public-access • transfer-connector-logging-enabled	March 7, 2025

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Elastic Compute Cloud (Amazon EC2). For more information, see AWS managed policies for AWS Config.	March 4, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • athena-workgroup-description • amplify-app-tagged • sagemaker-app-image-config-tagged • elasticbeanstalk-application-version-description • amplify-branch-performance-mode-enabled • athena-workgroup-engine-version-auto-upgrade • sagemaker-image-description • devicefarm-instance-profile-tagged • transfer-workflow-description • ec2-traffic-mirror-session-tagged • appstream-fleet-in-vpc • transfer-agreement-tagged • ec2-traffic-mirror-target-description • transfer-agreement-description • athena-prepared-statement-description	February 8, 2025

- batch-managed-compute-env-compute-resources-tagged
- codedeploy-deployment-group-auto-rollback-enabled
- batch-managed-compute-environment-using-launch-template
- ec2-prefix-list-tagged
- ec2-traffic-mirror-filter-tagged
- athena-workgroup-enforce-workgroup-configuration
- transfer-certificate-tagged
- batch-compute-environment-managed
- lightsail-disk-tagged
- transfer-profile-tagged
- ec2-traffic-mirror-target-tagged
- appintegrations-event-integration-tagged
- datasync-task-tagged
- batch-compute-environment-enabled
- appconfig-configuration-profile-validators-not-empty
- elasticbeanstalk-application-description

- codedeploy-deployment-group-outdated-instances-update
- ec2-launch-template-tagged
- fis-experiment-template-tagged
- ivs-channel-playback-authorization-enabled
- redshift-cluster-parameter-group-tagged
- ec2-traffic-mirror-filter-description
- appintegrations-event-integration-description
- athena-data-catalog-description
- fis-experiment-template-log-configuration-exists
- amplify-app-description
- amplify-branch-tagged
- batch-job-queue-enabled
- elasticbeanstalk-environment-description
- amplify-app-branch-auto-deletion-enabled
- appconfig-hosted-configuration-version-description
- appconfig-freeform-profile-config-storage
- datasync-task-data-verification-enabled

	• apprunner-service-observability-enabled • transfer-certificate-description • appconfig-deployment-strategy-replicate-to-ssm • transfer-workflow-tagged • transfer-connector-tagged • ec2-traffic-mirror-session-description • customerprofiles-object-type-allow-profile-creation • sagemaker-image-tagged	
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Simple Storage Service (Amazon S3) resource types. For more information, see Supported Resource Types.	February 6, 2025
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Simple Storage Service (Amazon S3) resource types. For more information, see Supported Resource Types.	January 29, 2025

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS Clean Rooms, Amazon Comprehend, Amazon Elastic Compute Cloud (Amazon EC2), AWS HealthOmics, Amazon Simple Storage Service (Amazon S3), and Amazon Simple Email Service (Amazon SES). For more information, see AWS managed policies for AWS Config.	January 16, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • appmesh-mesh-deny-tcp-forwarding • sagemaker-model-isolation-enabled • evidently-project-description • alb-internal-scheme-check • evidently-segment-description • appconfig-environment-description • apprunner-service-in-vpc • sagemaker-domain-in-vpc • nlb-internal-scheme-check • emr-security-configuration-encryption-rest • apprunner-service-no-public-access • sagemaker-model-in-vpc • appconfig-deployment-strategy-description • evidently-launch-description • iot-authorizer-token-signing-enabled	January 9, 2025

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud (Amazon EC2) resource types. For more informati on, see Supported Resource Types.	January 9, 2025

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • batch-job-queue-tagged • iottwinmaker-sync-job-tagged • codeguruprofiler-profiling-group-tagged • ivs-recording-configuration-tagged • iottwinmaker-entity-tagged • iottwinmaker-workspace-tagged • iottwinmaker-scene-tagged • acmpca-certificate-authority-tagged • appflow-flow-tagged • iotevents-detector-model-tagged • appmesh-virtual-node-logging-file-path-exists • apprunner-vpc-connector-tagged • apprunner-service-tagged • iotwireless-fuota-task-tagged • appmesh-virtual-node-backend-defaults-tls-on • codegururreviewer-repository-association-tagged • iotevents-input-tagged	January 8, 2025

- appmesh-virtual-gateway-logging-file-path-exists
- batch-compute-environment-tagged
- batch-scheduling-policy-tagged
- customerprofiles-object-type-tagged
- emr-security-configuration-encryption-transit
- iotwireless-service-profile-tagged
- ivs-playback-key-pair-tagged
- cassandra-keyspace-tagged
- iotevents-alarm-model-tagged
- appconfig-application-description
- appmesh-virtual-gateway-backend-defaults-tls
- ivs-channel-tagged
- iotwireless-multicast-group-tagged

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud (Amazon EC2), Amazon Cognito, AWS Elemental MediaConnect, and Amazon OpenSearch Service resource types. For more informati on, see Supported Resource Types.	December 19, 2024
Security IAM update	The `AWSConfigServiceRolePolicy` policy now grants additional permissions for AWS Organizations. For more information, see AWS managed policies for AWS Config.	December 18, 2024
AWS Config supports service-linked configuration recorders	With this release, AWS Config supports service-linked configuration recorders. You enable a service-linked configuration recorder in the supported service or using the AWS CLI, and the recorder records the resource types needed for the linked service on your behalf. You can view details of a service-linked configuration recorder using the AWS Config console or AWS CLI. For more informati on, see Working with the configuration recorder.	November 27, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • appconfig-application-tagged • appconfig-configuration-profile-tagged • appconfig-environment-tagged • appconfig-extension-association-tagged • appmesh-gateway-route-tagged • appmesh-mesh-tagged • appmesh-route-tagged • appmesh-virtual-gateway-tagged • appmesh-virtual-node-tagged • appmesh-virtual-router-tagged • appmesh-virtual-service-tagged • evidently-launch-tagged • evidently-project-tagged • evidently-segment-tagged • frauddetector-entity-type-tagged • frauddetector-label-tagged • frauddetector-outcome-tagged	November 12, 2024

- frauddetector-variable-tagged
- iotsitewise-asset-model-tagged
- iotsitewise-dashboard-tagged
- iotsitewise-gateway-tagged
- iotsitewise-portal-tagged
- iotsitewise-project-tagged

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS AppConfig, AWS CloudTrail, Amazon Connect, Amazon DataZone, Amazon DevOps Guru, AWS Glue, Identity Store, AWS IoT, AWS IoT FleetWise, AWS IoT Wireless, Amazon Interactive Video Service (Amazon IVS), Amazon CloudWatch Logs, Amazon CloudWatch Observability Access Manager, AWS Payment Cryptography, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, Amazon Simple Storage Service (Amazon S3), Amazon EventBridge Scheduler, AWS Systems Manager, and Amazon VPC Lattice. For more information, see AWS managed policies for AWS Config.	November 8, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: cognito-user-pool-advanced-security-enabled	November 6, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • active-mq-supported-version • rabbit-mq-supported-version • ec2-vpn-connection-logging-enabled • appsync-cache-ct-encryption-at-rest • appsync-cache-ct-encryption-in-transit • vpc-endpoint-enabled • efs-filesystem-ct-encrypted • redshift-cluster-subnet-group-multi-az • sns-topic-no-public-access • rabbit-mq-supported-version • kms-key-policy-no-public-access • rds-mysql-instance-encrypted-in-transit • rds-postgres-instance-encrypted-in-transit • rds-sql-server-logs-to-cloudwatch • ec2-launch-template-imdsv2-check	October 21, 2024

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for PCI DSS 4.0 (Excluding global resource types) • Operational Best Practices for PCI DSS 4.0 (Including global resource types)	September 23, 2024
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon OpenSearch Service Severless, Amazon AppStream, AWS Backup, AWS CloudTrail, AWS Glue, EC2 Image Builder, AWS IoT, Amazon Interactive Video Service (Amazon IVS), AWS Elemental MediaConnect, AWS Elemental MediaTail or, AWS HealthOmics, and Amazon EventBridge Scheduler. For more information, see AWS managed policies for AWS Config.	September 16, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • ec2-resources-in-logically-air-gapped-vault • ebs-resources-in-logically-air-gapped-vault • aurora-resources-in-logically-air-gapped-vault • efs-resources-in-logically-air-gapped-vault • s3-resources-in-logically-air-gapped-vault • storagegateway-resources-in-logically-air-gapped-vault • virtualmachine-resources-in-logically-air-gapped-vault	September 3, 2024
AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for FedRAMP (High Part 1) • Operational Best Practices for FedRAMP (High Part 2)	August 27, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • athena-workgroup-logging-enabled • codebuild-report-group-encrypted-at-rest • cognito-user-pool-advanced-security-enabled • datasync-task-logging-enabled • efs-automatic-backups-enabled • glue-job-logging-enabled • glue-ml-transform-encrypted-at-rest • kinesis-stream-backup-retention-check • rds-aurora-postgresql-logs-to-cloudwatch • rds-postgresql-logs-to-cloudwatch • workspaces-root-volume-encryption-enabled • workspaces-user-volume-encryption-enabled	July 22, 2024

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Elastic File System (Amazon EFS), Amazon Redshift and AWS Systems Manager for SAP. For more information, see AWS managed policies for AWS Config.	June 17, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • cloudtrail-s3-bucket-public-access-prohibited • cloudtrail-s3-bucket-access-logging	May 8, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: iam-external-access-analyzer-enabled	May 2, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • guardduty-malware-protection-enabled • guardduty-rds-protection-enabled • guardduty-s3-protection-enabled • inspector-lambda-standard-scan-enabled	April 26, 2024
AWS Config simplifies usage analysis with Amazon CloudWatch	With this release, the Amazon CloudWatch metrics for monitoring AWS Config data usage will display only billable usage. This means, non-billable usage will no longer be displayed in both the Amazon CloudWatch metrics emitted to AWS Config and the AWS Config console. This allows you to validate AWS Config setup and usage using Amazon CloudWatch metrics and correlate billable usage with associated costs. For more information, see AWS Config Usage and Success Metrics.	April 26, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: iam-server-certificate-expiration-check	April 23, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • vpc-sg-port-restriction-check • cloudtrail-all-write-s3-data-event-check • cloudtrail-all-read-s3-data-event-check	April 17, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • guardduty-eks-protection-audit-enabled • guardduty-eks-protection-runtime-enabled • guardduty-lambda-protection-enabled • inspector-ec2-scan-enabled • inspector-ecr-scan-enabled • inspector-lambda-code-scan-enabled • redshift-unrestricted-port-access	April 16, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: efs-mount-target-public-accessible	March 20, 2024

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • dms-neptune-iam-authorization-enabled • dms-mongo-db-authentication-enabled • dms-redis-tls-enabled • dax-tls-endpoint-encryption • eks-cluster-secrets-encrypted • kinesis-firehose-delivery-stream-encrypted • mq-cloudwatch-audit-log-enabled • mq-cloudwatch-audit-log-enabled • opensearch-primary-node-fault-tolerance • sagemaker-endpoint-config-prod-instance-count • service-catalog-shared-within-organization • transfer-family-server-no-ftp	February 26, 2024

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Service for Prometheus, Amazon CloudWatch, Amazon Cognito, Amazon ElastiCache, Amazon FSx, AWS Glue, AWS Identity and Access Management (IAM), AWS Lambda, AWS RAM, Amazon Redshift Serverless, Amazon SageMaker AI, and Amazon Simple Notification Service (Amazon SNS). For more information, see AWS managed policies for AWS Config.	February 22, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: s3-bucket-cross-region-replication-enabled	February 12, 2024

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS AppConfig, Amazon CloudWatch Evidently, AWS Identity and Access Management (IAM), Amazon MemoryDB (MemoryDB), Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Redshift, and AWS Transfer Family resource types. For more informati on, see Supported Resource Types.	February 6, 2024
AWS Config updates managed rules	With this release, AWS Config supports the following managed rule: macie-auto-sensitive-data-discovery-check	January 29, 2024

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon AppStream, AWS Key Management Service (AWS KMS), Amazon Relational Database Service (Amazon RDS), Amazon Cognito, Amazon Elastic Compute Cloud (Amazon EC2), EC2 Image Builder, AWS Ground Station, AWS Mainframe Modernization, Amazon QuickSight, Amazon Redshift, and AWS Systems Manager resource types. For more information, see Supported Resource Types.	January 3, 2024
Service limits increase for the maximum number of AWS Config Rules per Region per account	With this release, AWS Config supports 1000 AWS Config rules per AWS Region per account. This increase applies to the total of all deployed rules including AWS Config managed rules, AWS Config custom rules, AWS Config conformance packs, AWS Security Hub controls, AWS Firewall Manager policies, and AWS Backup backup plans per Region per account. For more information, see Service Limits.	December 19, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • s3-meets-restore-time-target • ebs-meets-restore-time-target • ec2-meets-restore-time-target • rds-meets-restore-time-target • efs-meets-restore-time-target • fsx-meets-restore-time-target • aurora-meets-restore-time-target • dynamodb-meets-restore-time-target	December 19, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS AppConfig, Amazon Managed Service for Prometheus, AWS Database Migration Service (AWS DMS), (AWS Identity and Access Management) IAM, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon CloudWatch Logs, AWS Organizations, and Amazon Simple Storage Service (Amazon S3). For more information, see AWS managed policies for AWS Config.	December 5, 2023

Preview release: Natural language query processor for advanced queries	With this release, you can use the natural language query processor for advanced queries, which uses generative artificial intelligence (generati ve AI) capabilities that allow you to ask questions in plain English and convert them into a ready-to-use query format. With the natural language query processor, you can query your AWS account or across an AWS organizat ion. For more information, see Natural language query processor for advanced queries.	November 26, 2023

Periodic recording	With this release, AWS Config supports periodic recording. Periodic recording provides you with the ability to capture the latest configuration changes for your resources over a fixed period of time. You can now set the default frequency for the configuration recorder to Daily, allowing you to receive a configuration item (CI) representing the most recent state of your resources over the last 24-hour period, only if it's different from the previous CI recorded. The AWS Config console also introduces a new recording strategy experience, where you can also override the recording frequency for specific resource types or exclude specific resource types from recording. This can help make your settings fit your granular requirements. The following data types are added: • RecordingMode • RecordingModeOverride The following data types are updated:	November 26, 2023

- PutConfigurationRecorder
- ConfigurationRecorder
- BaseConfigurationItem
- ConfigurationItem

The following pages in the developer guide are updated:

- Recoding AWS Resources
- Setting up AWS Config with the AWS Config Console | 1-click setup
- Setting up AWS Config with the AWS Config Console | Manual setup
- Setting up AWS Config with the AWS CLI

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Cognito, Amazon Connect, Amazon EMR, AWS Ground Station, AWS Mainframe Modernization, Amazon MemoryDB, AWS Organizations, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, Amazon Route 53, AWS Service Catalog, and AWS Transfer Family. The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy also now add security identifiers (SID) for `AWSConfigServiceRolePolicyStatementID` , `AWSConfigSLRLogStatementID` , `AWSConfigSLRLogEventStatementID` , `AWSConfigSLRApiGatewayStatementID` , and `AWSConfigServiceRolePolicy` policy.	November 17, 2023

	For more information, see AWS managed policies for AWS Config.	
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • acm-pca-root-ca-disabled • dynamodb-table-deletion-protection-enabled • ec2-client-vpn-connection-log-enabled • eks-cluster-log-enabled • emr-block-public-access • fsx-windows-audit-log-configured • fsx-openzfs-copy-tags-enabled • fsx-lustre-copy-tags-to-backups • msk-enhanced-monitoring-enabled • mq-auto-minor-version-upgrade-enabled • neptune-cluster-multi-az-enabled • opensearch-update-check • s3-access-point-in-vpc-only • s3-access-point-public-access-blocks • s3-bucket-mfa-delete-enabled	November 9, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS Identity and Access Management (IAM), AWS Network Manager, AWS Private Certificate Authority (AWS Private CA), AWS App Mesh, Amazon Connect, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Container Service (Amazon ECS), AWS IoT, AWS IoT TwinMaker, Amazon Managed Streaming for Apache Kafka Connect (Amazon MSK Connect), AWS Lambda, and AWS Resource Explorer resource types. For more information, see Supported Resource Types.	November 3, 2023
AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance pack: Operational Best Practices for BNM RMiT	October 26, 2023

Compliance and Inventory Dashboards for Aggregators	With this release, AWS Config adds a compliance dashboard page and an inventory dashboard page to the aggregated view in the AWS Config console. For the compliance dashboard page, you can view automated dashboards with widgets that summarize insights on resource compliance within your aggregator, such as Top 10 resource types by noncompliant resources, Top 10 account level conformance packs by noncompliant rules, and more. For the inventory dashboard page, you can view automated dashboard with widgets that summarize insights on resource configuration data within your aggregator, such as Top 10 resource types by resource count, Top 10 accounts by resource count, and more. For information on the graph and charts, see Compliance dashboard and Inventory dashboard.	October 23, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS Private CA, AWS App Mesh, Amazon Connect, Amazon Elastic Container Service (Amazon ECS), Amazon CloudWatch Evidently, Amazon Managed Grafana, Amazon GuardDuty, Amazon Inspector, AWS IoT, AWS IoT TwinMaker, Amazon Managed Streaming for Apache Kafka (Amazon MSK), AWS Lambda, AWS Network Manager, AWS Organizations, and Amazon SageMaker AI. For more information, see AWS managed policies for AWS Config.	October 4, 2023
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS IoT, AWS IoT TwinMaker, AWS IoT Wireless, Amazon Personalize Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon SageMaker AI, AWS CodeBuild, Amazon AppStream, and Amazon Inspector resource types. For more information, see Supported Resource Types.	October 4, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • docdb-cluster-deletion-protection-enabled • docdb-cluster-audit-logging-enabled • docdb-cluster-snapshot-public-prohibited • mq-active-deployment-mode • mq-rabbit-deployment-mode • dms-auto-minor-version-upgrade-check • dms-replication-task-target db-logging • dms-replication-task-source db-logging • dms-endpoint-ssl-configured • custom-eventbus-policy-attached • global-endpoint-event-replication-enabled • route53-query-logging-enabled • rds-aurora-mysql-audit-logging-enabled • rds-cluster-auto-minor-version-upgrade-enable • appsync-authorization-check	September 21, 2023

	• netfw-deletion-protection-enabled • wafv2-rulegroup-logging-enabled • msk-in-cluster-node-require-tls	
AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for Amazon S3 • Operational Best Practices for EC2	September 8, 2023
Security IAM update	The `AWSConfigServiceRolePolicy` policy now removes permissions for AWS Systems Manager (Systems Manager). For more information, see AWS managed policies for AWS Config.	September 6, 2023
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon CodeGuru Profiler, AWS Elemental MediaConnect, AWS Transfer Family, Amazon Managed Service for Prometheus, AWS Batch, AWS Cloud Map, and Amazon Route 53 Resolver resource types. For more information, see Supported Resource Types.	September 6, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • athena-workgroup-encrypted-at-rest • neptune-cluster-iam-database-authentication • neptune-cluster-copy-tags-to-snapshot-enabled • neptune-cluster-cloudwatch-log-export-enabled • neptune-cluster-deletion-protection-enabled • neptune-cluster-snapshot-encrypted • neptune-cluster-backup-retention-check • neptune-cluster-encrypted • neptune-cluster-snapshot-public-prohibited • docdb-cluster-backup-retention-check • docdb-cluster-encrypted • rds-cluster-encrypted-at-rest	August 10, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS Amplify, Amazon AppIntegrations, AWS App Mesh, Amazon Athena, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, Amazon Forecast, AWS IoT Greengrass Version 2, AWS Ground Station, AWS Elemental MediaConvert, AWS Elemental MediaTailor, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Personalize, Amazon Pinpoint, and AWS Resilience Hub resource types. For more information, see Supported Resource Types.	August 3, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Workflows for AWS App Mesh, Amazon AppStream 2.0, AWS CloudFormation, Amazon CloudFront AWS CodeArtifact, AWS CodeBuild, Amazon Connect, AWS Glue, Amazon GuardDuty, AWS Identity and Access Management (IAM), Amazon Inspector, AWS IoT, AWS IoT TwinMaker, AWS IoT Wireless, Amazon Managed Streaming for Apache Kafka, Amazon Macie, AWS Elemental MediaConnect, AWS Network Manager, AWS Organizations, AWS Resource Explorer, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), Amazon Simple Notification Service (Amazon SNS), and Amazon EC2 Systems Manager (SSM). For more information, see AWS managed policies for AWS Config.	July 28, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Kinesis, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, Amazon Simple Storage Service (Amazon S3), Amazon Virtual Private Cloud (Amazon VPC), Amazon Kendra, Amazon Connect, AWS CloudFormation, AWS AppConfig, AWS App Mesh, AWS App Runner, and AWS Database Migration Service (AWS DMS) resource types. For more information, see Supported Resource Types.	July 10, 2023
Service limits increase for organization conformance packs	With this release, AWS Config supports 350 AWS Config rules per region per account across all conformance packs and 350 organizational AWS Config rules per organization. For more information, see Service Limits.	June 13, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Workflows for AWS Amplify, Amazon Connect, AWS App Mesh, Amazon Managed Service for Prometheus, Amazon Athena, AWS Batch, AWS CloudFormation, AWS CloudTrail, AWS CodeArtifact, Amazon CodeGuru, AWS Directory Service, Amazon DynamoDB, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, Amazon Forecast, AWS Organizations, AWS IoT Greengrass, AWS Ground Station, AWS Identity and Access Management (IAM), Amazon Managed Streaming for Apache Kafka(Amazon MSK), Amazon Lightsail, Amazon CloudWatch Logs, AWS Elemental MediaConnect, AWS Elemental MediaTailor, Amazon Pinpoint, Amazon Virtual Private Cloud (Amazon VPC), Amazon Personalize, Amazon QuickSight, AWS Migration Hub Refactor Spaces, Amazon Simple Storage Service (Amazon	June 13, 2023

S3), Amazon SageMaker AI, and AWS Transfer Family. For more information, see AWS managed policies for AWS Config.

AWS Config Recording Exclusions by Resource Type	With this release, AWS Config allows you to exclude specific types of AWS resources from inventory tracking and compliance monitoring while still tracking all other supported resource types currently available in AWS Config, including those that will be added in the future. You can use this feature to concentrate on critical resources that are subject to your compliance and governance standards. The updates to the API for the configuration recorder and recording group are backward compatible, meaning that they work with previous versions of the PutConfigurationRecorder API. You can continue to manage which resource types are recorded in the exact same way as before without using the updated or new APIs. The following data types are added: • RecordingStrategy • ExclusionByResourceTypes The following data types are updated:	June 9, 2023

	• PutConfigurationRecorder • ConfigurationRecorder • RecordingGroup The following page in the developer guide is updated: • Selecting Which Resources are Recorded	
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Container Service (Amazon ECS), Amazon Keyspaces (for Apache Cassandra) (Amazon Keyspaces), AWS Signer, AWS Amplify, AWS App Mesh, AWS App Runner, Amazon AppStream 2.0, AWS CodeArtifact, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, Amazon Forecast, AWS Identity and Access Management (IAM), Amazon Pinpoint, Amazon SageMaker AI, AWS Transfer Family, Amazon Data Firehose resource types. For more information, see Supported Resource Types.	June 5, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • cloudfront-s3-origin-access-control-enabled • custom-schema-registry-policy-attached • ec2-client-vpn-not-authorize-all • elasticache-supported-engine-version • macie-status-check • mq-automatic-minor-version-upgrade-enabled • mq-cloudwatch-audit-logging-enabled • netfw-logging-enabled • opensearch-encrypted-at-res • step-functions-state-machine-logging-enabled	May 10, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Route 53 Resolver, Amazon Elastic Compute Cloud (Amazon EC2), AWS IoT Wireless, AWS Network Manager, AWS Device Farm, AWS Ground Station, Amazon AppFlow, Amazon Redshift, Amazon Pinpoint, AWS IoT, AWS AppConfig, EC2 Image Builder, Amazon CloudWatch, AWS Panorama, Amazon SageMaker Runtime, Amazon ECR, and AWS Audit Manager resource types. For more information, see Supported Resource Types.	May 5, 2023
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to `AWS::NetworkFirewall::TLSInspectionConfiguration`. For more information, see Supported Resource Types.	May 1, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Workflows for AWS Amplify, AWS App Mesh, AWS App Runner, Amazon CloudFront, AWS CodeArtifact, Amazon Elastic Compute Cloud, Amazon Kendra, Amazon Macie, Amazon Route 53, Amazon SageMaker AI, AWS Transfer Family, Amazon Pinpoint, AWS Migration Hub, AWS Resilience Hub, Amazon CloudWatch, AWS Directory Service, and AWS WAF. For more information, see AWS managed policies for AWS Config.	April 13, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • elasticache-auto-minor-version-upgrade-check • elasticache-repl-grp-auto-failover-enabled • elasticache-repl-grp-encrypted-at-rest • elasticache-repl-grp-encrypted-in-transit • elasticache-repl-grp-redis-auth-enabled • elasticache-subnet-group-check • cloudfront-s3-origin-non-existent-bucket	April 10, 2023
Service limits increase for organization conformance packs	With this release, AWS Config supports 350 AWS Config rules per account across all organization conformance packs. For more information, see Service Limits.	April 3, 2023

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • acm-certificate-rsa-check • appsync-associated-with-waf • appsync-logging-enabled • elasticache-rbac-auth-enabled • mq-no-public-access • netfw-multi-az-enabled • ses-malware-scanning-enabled • eks-cluster-logging-enabled • appsync-cache-encryption-at-rest	April 3, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon AppStream 2.0, AWS Auto Scaling, Amazon Connect Amazon Elastic Compute Cloud, Amazon EventBridge, HealthLake, Kinesis video stream, AWS IoT TwinMaker, Lookout for Vision, Network Manager, Amazon Pinpoint, Amazon Application Recovery Controller (ARC), and AWS RoboMaker resource types. For more information, see Supported Resource Types.	April 3, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Workflows for Amazon AppFlow, AWS App Runner, Amazon AppStream 2.0, AWS CloudFormation, Amazon CloudFront, Amazon CloudWatch, AWS CodeArtifact, AWS CodeCommit, AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon CloudWatch Evidently, Amazon Forecast, AWS Ground Station, AWS Identity and Access Management (IAM), AWS IoT, Amazon MemoryDB, Amazon Pinpoint, AWS Network Manager, AWS Panorama, Amazon Relational Database Service (Amazon RDS), Amazon Redshift, and Amazon SageMaker AI. For more information, see AWS managed policies for AWS Config.	March 30, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS Audit Manager. For more information, see AWS managed policies for AWS Config.	March 3, 2023
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS Elemental MediaPackage, Amazon EventBridge, AWS IoT, (Amazon Simple Storage Service (Amazon S3), Amazon Elastic Compute Cloud (Amazon EC2), Amazon Lookout for Metrics, Amazon Lex, AWS Budgets, AWS Device Farm, Amazon CodeGuru Reviewer, Amazon Route 53 Resolver, and AWS RoboMaker resource types. For more information, see Supported Resource Types.	March 2, 2023
Security IAM update	AWS Config now tracks changes to the `AWSConfigMultiAccountSetupPolicy` policy. For more information, see AWS managed policies for AWS Config.	February 27, 2023

AWS Config Resource Coverage by Region Availability	With this release, AWS Config provides Region information for each supported resource type. For information on which resource types are supported in which Regions, see Resource Coverage by Region Availability.	February 20, 2023
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Interactive Video Service (Amazon IVS), Amazon Simple Storage Service (Amazon S3), AWS Glue, Amazon Elastic Kubernetes Service (Amazon EKS), AWS IoT, Amazon Relational Database Service (Amazon RDS), and Managed Service for Apache Flink resource types. For more information, see Supported Resource Types.	February 7, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Workflows for Apache Airflow, AWS IoT, Amazon AppStream 2.0, Amazon CodeGuru Reviewer, AWS HealthLake, Amazon Kinesis Video Streams, Amazon Application Recovery Controller (ARC), AWS Device Farm, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Pinpoint, AWS Identity and Access Management (IAM), Amazon GuardDuty, and Amazon CloudWatch Logs. For more information, see AWS managed policies for AWS Config.	February 1, 2023
Security IAM update	As a security best practice, the `ConfigConformsServiceRolePolicy` policy now removes broad resource-level permission for `config:DescribeConfigRules` . For more information, see AWS managed policies for AWS Config.	January 12, 2023

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Managed Service for Prometheus, AWS Audit Manager, AWS Device Farm, AWS Database Migration Service (AWS DMS), AWS Directory Service, Amazon Elastic Compute Cloud (Amazon EC2), AWS Glue, AWS IoT, Amazon Lightsail , AWS Elemental MediaPackage, AWS Network Manager, Amazon QuickSight, AWS Resource Access Manager, Amazon Application Recovery Controller (ARC), Amazon Simple Storage Service (Amazon S3), and Amazon Timestream. For more information, see AWS managed policies for AWS Config.	January 10, 2023

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon MQ, AWS AppConfig, AWS Cloud9, Amazon EventBridge schemas, Amazon Fraud Detector, AWS IoT, AWS IoT Analytics, Amazon Lightsail, AWS Elemental MediaPackage (MediaPackage), Amazon Application Recovery Controller (ARC), AWS Resilience Hub, and AWS Transfer Family resource types. For more information, see Supported Resource Types.	January 5, 2023
AWS Config rule resource coverage	With this release, AWS Config displays the resource type coverage for an increased number of AWS Config managed rules.	December 21, 2022
AWS Config rule discoverability	With this release, AWS Config supports pages for List of AWS Config Managed Rules by Evaluation Mode, List of AWS Config Managed Rules by Trigger Type, and List of AWS Config Managed Rules by Region Availability.	December 21, 2022

AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for K-ISMS • Operational Best Practices for NIST 800 171 • Operational Best Practices for PCI DSS 3.2.1 • Operational Best Practices for Esquema Nacional de Seguridad (ENS) High • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low • Operational Best Practices for NZISM • Operational Best Practices for NIST 800-53 rev 5	December 19, 2022

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • api-gwv2-access-logs-enabled • api-gwv2-authorization-type-configured • cloudfront-security-policy-check • ec2-launch-template-public-ip-disabled • elastic-beanstalk-logs-to-cloudwatch • sagemaker-notebook-instance-inside-vpc • sagemaker-notebook-instance-root-access-check • security-account-information-provided • storagegateway-resources-protected-by-backup-plan • wafv2-rulegroup-not-empty • wafv2-webacl-not-empty	December 9, 2022

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon CloudWatch RUM, Amazon EventBridge, Amazon GuardDuty, Amazon Simple Email Service (Amazon SES), AWS Backup, AWS DataSync, and AWS Fault Injection Service (AWS FIS) resource types. For more informati on, see Supported Resource Types.	December 9, 2022

AWS Config Proactive Compliance	With this release, AWS Config supports the ability to proactively check for compliance with AWS Config rules before resource provisioning. This allows you to evaluate the configuration settings of your resources before they are created or updated. Use AWS Config to track the configuration changes made to your resources, either pre-provisioning or post-provisioning, and check if your resources match your desired configurations. The following data types are added: • GetResourceEvaluationSummary • StartResourceEvaluation • ListResourceEvaluations The following data types are updated: • DescribeConfigRulesFilters • GetComplianceDetailsByResource • EvaluationResultQualifier • EvaluationModeConfiguration	November 28, 2022

The following pages in the developer guide are updated:

- Components of an AWS Config Rule
- Evaluation Mode and Trigger Types for AWS Config Rules
- AWS Config Managed Rules
- AWS Config Custom Rules
- Managing Your AWS Config Rules

Drift Detection as Configuration Item (CI) for the AWS Config Configuration Recorder	With this release, AWS Config tracks all changes to the configuration recorder to indicate if the state of the configuration recorder differs, or has *drifted*, from its previous state; for example, if there are updates to resource types that you have enabled AWS Config to track, if you have stopped or started the configuration recorder, or if you have deleted or uninstalled the configuration recorder. The `AWS::Config::ConfigurationRecorder` resource type is a system resource type of AWS Config and recording of this resource type is enabled by default in all supported Regions. Recording for the `AWS::Config::ConfigurationRecorder` resource type comes with no additional charge. For more information, see Drift Detection for the Configuration Recorder.	November 18, 2022

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new AWS IoT Events, AWS Cloud Map, EC2 Image Builder, AWS DataSync, AWS Glue, Amazon Application Recovery Controller (ARC), and Amazon Elastic Container Registry (Amazon ECR) resource types. For more information, see Supported Resource Types.	November 8, 2022
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS CloudFormation. For more information, see AWS managed policies for AWS Config.	November 7, 2022

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for Criminal Justice Information Services (CJIS) • Security Best Practices for Amazon SageMaker AI • Security Best Practices for Amazon Elastic Container Registry The following conformance packs are updated: • Operational Best Practices for MAS TRMG • Operational Best Practices for NCSC Cyber Assesment Framework • Operational Best Practices for NCSC Cloud Security Principles	October 27, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS Certificate Manager, Amazon Managed Workflows for Apache Airflow, AWS Amplify, AWS AppConfig, Amazon Keyspaces, Amazon CloudWatch, Amazon Connect, AWS Glue DataBrew, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Kubernetes Service (Amazon EKS), Amazon EventBridge, AWS Fault Injection Service, Amazon Fraud Detector, Amazon FSx, Amazon GameLift Servers, Amazon Location Service, AWS IoT, Amazon Lex, Amazon Lightsail, Amazon Pinpoint, AWS OpsWorks, AWS Panorama, AWS Resource Access Manager, Amazon QuickSight, Amazon Relational Database Service (Amazon RDS), Amazon Rekognition, AWS RoboMaker, AWS Resource Groups, Amazon Route 53, Amazon Simple Storage Service (Amazon S3), AWS Cloud Map, and AWS Security Token Service. For more informati	October 19, 2022

	on, see AWS managed policies for AWS Config.	
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud (Amazon EC2), Amazon Simple Email Service (Amazon SES), AWS AppConfig, AWS Cloud Map, and AWS DataSync resource types. For more information, see Supported Resource Types.	October 6, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon GuardDuty, Amazon SageMaker AI, AWS AppSync, AWS Cloud Map, and AWS DataSync resource types. For more information, see Supported Resource Types.	October 4, 2022
AWS Config supports new conformance pack	With this release, AWS Config updates the Operational Best Practices for SWIFT CSP conformance pack.	October 4, 2022

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for CMMC 2.0 Level 1 • Operational Best Practices for CMMC 2.0 Level 2 The following conformance packs are updated: • Operational Best Practices for Amazon API Gateway • Operational Best Practices for AWS Well-Architected Framework Reliability Pillar • Operational Best Practices for AWS Well-Architected Framework Security Pillar • Operational Best Practices for CMMC Level 1 • Operational Best Practices for CMMC Level 2 • Operational Best Practices for CMMC Level 3 • Operational Best Practices for CMMC Level 4 • Operational Best Practices for CMMC Level 5 • Operational Best Practices for FFIEC • Operational Best Practices for FedRAMP(Low)	September 30, 2022

	• Operational Best Practices for MAS Notice 655 • Operational Best Practices for NBC TRMG • Operational Best Practices for NIST 800 172	
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS Glue. For more information, see AWS managed policies for AWS Config.	September 14, 2022
AWS Config supports new conformance pack	With this release, AWS Config supports the Operational Best Practices for SWIFT CSP conformance pack.	September 9, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon AppFlow, Amazon CloudWatch, Amazon CloudWatch RUM, Amazon CloudWatch Synthetics, Amazon Connect Customer Profiles, Amazon Connect Voice ID, Amazon DevOps Guru, Amazon Elastic Compute Cloud (Amazon EC2), Amazon EC2 Auto Scaling, Amazon EMR, Amazon EventBridge, Amazon EventBridge Schemas, Amazon FinSpace, Amazon Fraud Detector, Amazon GameLift Servers, Amazon Interactive Video Service (Amazon IVS), Amazon Managed Service for Apache Flink, EC2 Image Builder, Amazon Lex, Amazon Lightsail, Amazon Location Service, Amazon Lookout for Equipment, Amazon Lookout for Metrics, Amazon Lookout for Vision, Amazon Managed Blockchain, Amazon MQ, Amazon Nimble StudioAmazon Pinpoint, Amazon QuickSight, Amazon Application Recovery Controller (ARC), Amazon Route 53 Resolver,	September 7, 2022

Amazon Simple Storage Service (Amazon S3), Amazon SimpleDB, Amazon Simple Email Service (Amazon SES), Amazon Timestream, AWS AppConfig, AWS AppSync, AWS Auto Scaling, AWS Backup, AWS Budgets, AWS Cost Explorer, AWS Cloud9, AWS Directory Service, AWS DataSync, AWS Elemental MediaPackage, AWS Glue, AWS IoT, AWS IoT Analytics , AWS IoT Events, AWS IoT SiteWise, AWS IoT TwinMaker , AWS Lake Formation, AWS License Manager, AWS Resilience Hub, AWS Signer, and AWS Transfer Family. For more information, see AWS managed policies for AWS Config.

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for Amazon CloudWatch • Operational Best Practices for Germany Cloud Computing Compliance Controls Catalog (C5) • Operational Best Practices for IRS 1075 The following conformance packs are updated: • AWS Control Tower Detective Guardrails Conformance Pack • Operational Best Practices for CISA Cyber Essentials • Operational Best Practices for ENISA Cybersecurity guide for SMEs • Operational Best Practices for FDA Title 21 CFR Part 11 • Operational Best Practices for FedRAMP(Moderate) • Operational Best Practices for HIPAA Security • Operational Best Practices for NIST Privacy Framework v1.0 • Operational Best Practices for NYDFS 23	August 31, 2022

	• Operational Best Practices for RBI Cyber Security Framework for UCBs • Operational Best Practices for RBI MD-ITF	
Getting Started with AWS Config and Custom Conformance Pack updates	With this release, AWS Config updates the Getting Started with AWS Config and Setting Up AWS Config with the Console pages, introducing a 1-click setup and Manual setup page. AWS Config also updates the Custom Conformance Pack page with a walkthrough on how to create a conformance pack YAML file from scratch.	August 25, 2022

AWS Systems Manager Document (SSM document) Integration with Conformance Packs	With this release, you can create a conformance pack template with an SSM document. For more informati on on SSM documents, see AWS Systems Manager Documents in the AWS Systems Manager User Guide. The following data types are updated: • PutConformancePack • ConformancePackDetail • TemplateSSMDocumen tDetails The following pages in the developer guide are updated: • Deploying a Conformance Pack Using the AWS Config Console • Deploying a Conforman ce Pack Using the AWS Command Line Interface	August 24, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Simple Email Service (Amazon SES), AWS DataSync, and AWS Cloud Map. For more information, see AWS managed policies for AWS Config.	August 22, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Athena, Amazon Detective, Amazon SageMaker AI, Amazon Route 53, AWS Database Migration Service (AWS DMS), AWS Glue, AWS Key Management Service (AWS KMS), and Amazon Simple Email Service (Amazon SES) resource types. For more information, see Supported Resource Types.	August 16, 2022

AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for NIST 1800 25 • Operational Best Practices for NIST 800 181 • Operational Best Practices for ABS CCIG 2.0 Standard Workloads • Operational Best Practices for ABS CCIG 2.0 Material Workloads • Operational Best Practices for ACSC Essential 8 • Operational Best Practices for ACSC ISM • Operational Best Practices for APRA CPG 234 • Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1 • Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2 • Operational Best Practices for BNM RMiT • Operational Best Practices for NIST CSF	August 1, 2022

Compliance score for conformance packs	With this release, AWS Config introduces compliance score for conformance packs, which provides you with a high-level view of the compliance state of your conformance packs. You can use it to identify, investigate, and understand the level of compliance in your conformance packs. A compliance score is the percentage of the number of compliant rule-resource combinations in a conformance pack compared to the number of total possible rule-resource combinations in the conformance pack. The following data types are updated: • ListConformancePackComplianceScores • ConformancePackComplianceScore The following pages in the developer guide are updated: • Viewing the AWS Config Dashboard • Viewing Compliance Data in the Conformance Packs Dashboard	July 26, 2022

	• Managing Conformance Packs (API)	
Security IAM update	The `ConfigConformsServiceRolePolicy` policy now grants permission to publish metric data points to Amazon CloudWatch. For more information, see AWS managed policies for AWS Config.	July 25, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Elastic Container Service (Amazon ECS), Amazon ElastiCache, Amazon EventBridge, Amazon FSx, Amazon Managed Service for Apache Flink, Amazon Location Service, Amazon Managed Streaming for Apache Kafka, Amazon QuickSight, Amazon Rekognition, AWS RoboMaker, Amazon Simple Storage Service (Amazon S3), Amazon Simple Email Service (Amazon SES), AWS Amplify, AWS AppConfig, AWS AppSync, AWS Billing Conductor, AWS DataSync, AWS Firewall Manager, AWS Glue, AWS IAM Identity Center (IAM Identity Center), EC2 Image Builder, and Elastic Load Balancing. For more information, see AWS managed policies for AWS Config.	July 15, 2022

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud (Amazon EC2) resource types. For more informati on, see Supported Resource Types.	July 8, 2022
AWS Config supports new resources type	With this release, you can use AWS Config to record configuration changes to new AWS Global Accelerat or resource types. For more information, see Supported Resource Types.	July 5, 2022
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • autoscaling-launch-template • ecs-task-definition-log-con figuration • ecs-awsvpc-networking-enabled	July 1, 2022

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for Canadian Centre for Cyber Security (CCCS) Medium Cloud Control Profile • Operational Best Practices for Gramm Leach Bliley Act (GLBA) • Operational Best Practices for GxP EU Annex 11 • Security Best Practices for Amazon Elastic Kubernetes Service (Amazon EKS) • Security Best Practices for Amazon Relational Database Service (Amazon RDS) • Security Best Practices for AWS Lambda The following conformance packs are updated: • Operational Best Practices for AI and ML • Operational Best Practices for Amazon DynamoDB • Operational Best Practices for CIS Critical Security Controls v8 IG1	June 30, 2022

	• Operational Best Practices for CIS Critical Security Controls v8 IG2 • Operational Best Practices for CIS Critical Security Controls v8 IG3 • Operational Best Practices for HIPAA Security • Operational Best Practices for NIST 800-53 rev 5 • Operational Best Practices for NIST CSF	
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon SageMaker AI resource types. For more information, see Supported Resource Types.	June 29, 2022

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Route 53, Amazon WorkSpaces, AWS Batch, AWS Identity and Access Management Access Analyzer (IAM Access Analyzer), AWS Database Migration Service (AWS DMS), AWS Step Functions, and Elastic Load Balancing resource types. For more information, see Supported Resource Types.	June 14, 2022

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • aurora-last-backup-recovery-point-created • dynamodb-last-backup-recovery-point-created • ebs-last-backup-recovery-point-created • ec2-last-backup-recovery-point-created • efs-last-backup-recovery-point-created • fsx-last-backup-recovery-point-created • rds-last-backup-recovery-point-created • s3-last-backup-recovery-point-created • storagegateway-last-backup-recovery-point-created • virtualmachine-last-backup-recovery-point-created	June 13, 2022

AWS Config Integration with AWS Security Hub	With this release, you can see the results of AWS Config managed and custom rule evaluations as findings in AWS Security Hub. Security Hub transforms rule evaluatio ns into findings, which provide more informati on about the impacted resources, such as the Amazon Resource Name (ARN) and creation date. These findings can be viewed alongside other Security Hub findings, providing a comprehensive overview of your security posture. For more information, see Sending Rule Evaluations to Security Hub	June 7, 2022
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for Amazon Athena, Amazon Detective, Amazon GuardDuty, Amazon Macie, Amazon Simple Email Service (Amazon SES), AWS Glue, AWS Resource Access Manager (AWS RAM), and AWS IAM Identity Center. For more information, see AWS managed policies for AWS Config.	May 31, 2022

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Security Best Practices for Amazon Elastic Container Service (Amazon ECS) • Security Best Practices for Amazon Elastic File System (Amazon EFS) • Security Best Practices for Amazon CloudFront • Security Best Practices for AWS Auto Scaling • Security Best Practices for AWS Network Firewall • Security Best Practices for AWS Secrets Manager	May 31, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon SageMaker AI and AWS Step Functions resource types. For more informati on, see Supported Resource Types.	May 26, 2022
AWS Config supports new conformance pack	With this release, AWS Config updates the Operational Best Practices for NERC CIP BCSI conformance pack.	May 20, 2022

Components of an AWS Config Rule	With this release, AWS Config introduces a Components of an AWS Config Rule page. The page discusses the structure of rule definitions, rule metadata, and best practices on how to write rules with Python using the AWS Config Rules Development Kit (RDK) and AWS Config Rules Development Kit Library (RDKlib).	May 9, 2022
Service limits increase for organization conformance packs	With this release, AWS Config supports 180 AWS Config rules per account across all organization conformance packs. For more information, see Service Limits.	May 6, 2022
AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Security Best Practices for Amazon OpenSearch Service • Security Best Practices for Amazon Redshift • Security Best Practices for AWS CloudTrail • Security Best Practices for AWS CodeBuild • Security Best Practices for AWS WAF	April 29, 2022

AWS Config updates managed rule	With this release, AWS Config supports the s3-resources-protected-by-backup-plan managed rule.	April 11, 2022
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions to get information about all or a specified AWS CloudTrail event data store (EDS), get information about all or a specified AWS CloudFormation resource, get a list of a DynamoDB Accelerator (DAX) parameter group or subnet group, get information about AWS Database Migration Service (AWS DMS) replication tasks for your account in the current region being accessed, and get a list all policies in an AWS Organizations of a specified type. For more information, see AWS managed policies for AWS Config.	April 7, 2022

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • alb-desync-mode-check • autoscaling-capacity-rebalancing • autoscaling-launchconfig-requires-imdsv2 • autoscaling-launch-config-hop-limit • autoscaling-multiple-instance-types • clb-desync-mode-check • ecs-container-insights-enabled • ecs-fargate-latest-platform-version • netfw-policy-default-action-fragment-packets • netfw-policy-default-action-full-packets • netfw-policy-rule-group-associated • redshift-audit-logging-enabled • s3-lifecycle-policy-check • waf-regional-rule-not-empty • waf-regional-rulegroup-not-empty • waf-regional-webacl-not-empty	April 4, 2022

- vpc-peering-dns-resolution-check

AWS Config Custom Policy rules	With this release, AWS Config allows you to create AWS Config Custom Policy rules using AWS CloudFormation Guard (guard). Guard is a policy-as-code language that allows you to write policies that are enforced by AWS Config without the need to create Lambda functions to manage your custom rules. Rules written using Guard policy can be created from the AWS Config console or by using the AWS Config rule APIs. The following pages in the developer guide are updated: • AWS Config Custom Rules • Creating AWS Config Custom Rules with Guard The following data types are updated: • Source • CustomPolicyDetails • ConfigRuleEvaluationStatus • GetCustomRulePolicy • GetOrganizationCustomRulePolicy • OrganizationCustomPolicyRuleMetadata	April 4, 2022

AWS Config supports new resources type	With this release, you can use AWS Config to record configuration changes to the new Amazon EMR SecurityConfiguration resource type. For more information, see Supported Resource Types.	March 31, 2022
AWS Config updates managed rule	With this release, AWS Config supports the virtualmachine-resources-protected-by-backup-plan managed rule.	March 29, 2022

AWS Config Integration with Amazon CloudWatch Metrics	With this release, AWS Config now supports tracking of your AWS Config usage and success metrics with Amazon CloudWatch in the AWS Config Dashboard page. CloudWatch metrics is a monitoring service which provides data about the performance of your systems, including the ability to search, graph, and build alarms on metrics about AWS resources . From the AWS Config Dashboard, you can see what traffic is driving your AWS Config usage and key metrics for failures that have occured in your workflow. The following page is updated: • Viewing the AWS Config Dashboard	March 29, 2022
AWS Config supports new resources type	With this release, you can use AWS Config to record configuration changes to new Amazon GuardDuty Detector resource type. For more information, see Supported Resource Types.	March 24, 2022

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • clb-multiple-az • cloudfront-no-deprecated-ssl-protocols • cloudfront-traffic-to-origin-encrypted • cloudwatch-alarm-action-enabled-check • ec2-no-amazon-key-pair • ec2-paravirtual-instance-check • ec2-token-hop-limit-check • ec2-transit-gateway-auto-vpc-attach-disabled • ecr-private-lifecycle-policy-configured • efs-access-point-enforce-root-directory • efs-access-point-enforce-user-identity • elbv2-multiple-az • kinesis-stream-encrypted • redshift-default-db-name-check • s3-event-notifications-enabled • sns-topic-message-delivery-notification-enabled	March 23, 2022

	• waf-global-rulegroup-not-empty • waf-global-rule-not-empty	
AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for CIS Critical Security Controls v8 IG1 • Operational Best Practices for CIS Critical Security Controls v8 IG2 • Operational Best Practices for CIS Critical Security Controls v8 IG3 • Operational Best Practices for AWS Well-Architected Framework Security Pillar • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium • Operational Best Practices for Esquema Nacional de Seguridad (ENS) High • Operational Best Practices for MAS Notice 655 • Operational Best Practices for NIST 1800-25	March 16, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant additional permissions for AWS CloudFormation. For more information, see AWS managed policies for AWS Config.	March 14, 2022
AWS Config updates managed rules	With this release, AWS Config updates the following managed rules: • aurora-resources-protected-by-backup-plan • dynamodb-resources-protected-by-backup-plan • ebs-resources-protected-by-backup-plan • ec2-resources-protected-by-backup-plan • efs-resources-protected-by-backup-plan • fsx-resources-protected-by-backup-plan • rds-resources-protected-by-backup-plan	March 10, 2022

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Container Registry Public resource types. For more informati on, see Supported Resource Types.	March 4, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud resource types. For more information, see Supported Resource Types.	February 28, 2022
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • codedeploy-auto-rollback-monitor-enabled • codedeploy-ec2-minimum-healthy-hosts-configured • codedeploy-lambda-allatonce-traffic-shift-disabled	February 25, 2022

Logging and Monitoring in AWS Config Update	With this release, AWS Config updates the Monitoring AWS Config with Amazon EventBridge Events page to replace references to Amazon CloudWatch Events. Amazon EventBridge is the preferred way to manage your events. CloudWatch Events and EventBridge are the same underlying service and API, but EventBridge provides more features. Changes you make in either CloudWatch or EventBridge will appear in each console. For more informance, see Amazon EventBridge.	February 24, 2022
AWS SDK Page for AWS Config	With this release, AWS Config introduces a Using AWS Config with an AWS SDK page. AWS software development kits (SDKs) are available for many popular programming languages . Each SDK provides an API, code examples, and documentation that make it easier for developers to build applications in their preferred language.	February 24, 2022

Security IAM Role Trust policy update	With this release, AWS Config updates the IAM trust policy statement to include security protections in the trust policy that restrict access with `sourceARN` and/or `sourceAccountId` for the AWS Security Token Service (AWS STS) operation. This helps make sure that the IAM role trust policy is accessing your resources on behalf of expected users and scenarios only. The following page is updated: • Adding an IAM Trust Policy to your Role	February 18, 2022

Changes to Global Resource Type Recording	AWS Config now changes how new global resource types are recorded in AWS Config Recording. Global resource types are AWS resources that do not require you to specify a region at creation. Before this change, you could enable the recording of global resource types in all supported regions in AWS Config. After this change, new global resource types onboarded to AWS Config recording can only be recorded in the service's home region for the commercial partition, and AWS GovCloud (US-West) for the AWS GovCloud (US) partition. You will now be able to view the configuration items for these new global resource types only in their home region and AWS GovCloud (US-West) . For a list of home regions for global resource types onboarded after February 2022, see the table on the Recording All Supported Resource Types page.	February 18, 2022

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to get details about Elastic Beanstalk environments and a description of the settings for the specified Elastic Beanstalk configuration set, get a map of OpenSearch or Elasticsearch versions, describe the available Amazon RDS option groups for a database, and get information about a CodeDeploy deployment configuration. This policy also now grants permission to retrieve the specified alternate contact attached to an AWS account, retrieve information about an AWS Organizations policy, retrieve an Amazon ECR repository policy, retrieve information about an archived AWS Config rule, retrieve a list of Amazon ECS task definition families, list the root or parent organizational units (OUs) of the specified child OU or account, and list the policies that are attached to the specified target root, organizational unit, or account. For more informati	February 10, 2022

on, see AWS managed policies for AWS Config.

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • autoscaling-multiple-az • codebuild-project-artifact-encryption • codebuild-project-environment-privileged-check • codebuild-project-logging-enabled • codebuild-project-s3-logs-encrypted • ec2-security-group-attached-to-eni-periodic • ecr-private-image-scanning-enabled • ecr-private-tag-immutability-enabled • ecs-containers-nonprivileged • ecs-containers-readonly-access • ecs-no-environment-secrets • ecs-task-definition-memory-hard-limit • ecs-task-definition-nonroot-user • ecs-task-definition-pid-mode-check • eks-cluster-oldest-supported-version	February 10, 2022

	• eks-cluster-supported-version • lambda-vpc-multi-az-check • nacl-no-unrestricted-ssh-rdp • netfw-stateless-rule-group-not-empty • rds-cluster-default-admin-check • rds-db-security-group-not-allowed • rds-instance-default-admin-check • redshift-default-admin-check • s3-bucket-acl-prohibited • s3-version-lifecycle-policy-check • waf-global-webacl-not-empty	
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to create Amazon CloudWatch log groups and streams and to write logs to created log streams. For more information, see AWS managed policies for AWS Config.	February 2, 2022

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • opensearch-access-control-enabled • opensearch-audit-logging-enabled • opensearch-data-node-fault-tolerance • opensearch-encrypted-at-rest • opensearch-https-required • opensearch-in-vpc-only • opensearch-logs-to-cloudwatch • opensearch-node-to-node-encryption-check	January 31, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to AWS CodeDeploy resource types. For more information, see Supported Resource Types.	January 5, 2022
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon SageMaker AI resource types. For more information, see Supported Resource Types.	December 20, 2021

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for ENISA Cybersecurity guide for SMEs	December 20, 2021
AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for NIST 800 172 • Operational Best Practices for NIST 800 181 The following conformance pack is updated: • Operational Best Practices for K-ISMS	November 18, 2021

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for Amazon API Gateway • Operational Best Practices for AWS Backup • Operational Best Practices for CISA Cyber Essentials • Operational Best Practices for DevOps • Operational Best Practices for NIST Privacy Framework v1.0 The following conformance packs are updated: • Operational Best Practices for FedRAMP(Low) • Operational Best Practices for FedRAMP(Moderate)	October 29, 2021
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon OpenSearch Service resource types. For more information, see Supported Resource Types.	October 12, 2021

AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance pack: • Operational Best Practices for MAS TRMG	October 12, 2021

AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for ABS CCIG 2.0 Material Workloads • Operational Best Practices for ABS CCIG 2.0 Standard Workloads • Operational Best Practices for ACSC Essential 8 • Operational Best Practices for ACSC ISM • Operational Best Practices for BNM RMiT • Operational Best Practices for CMMC Level 1 • Operational Best Practices for CMMC Level 2 • Operational Best Practices for CMMC Level 3 • Operational Best Practices for CMMC Level 4 • Operational Best Practices for CMMC Level 5 • Operational Best Practices for FDA Title 21 CFR Part 11 • Operational Best Practices for FFIEC • Operational Best Practices for MAS Notice 655 • Operational Best Practices for NBC TRMG	September 30, 2021

	• Operational Best Practices for NERC CIP • Operational Best Practices for NIST 800-53 rev 5	
Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to get details about an Amazon OpenSearch Service (OpenSearch Service) domain/domains and to get a detailed parameter list for a particular Amazon Relational Database Service (Amazon RDS) DB parameter group. This policy also grants permission to get details about Amazon ElastiCache snapshots. For more information, see AWS managed policies for AWS Config.	September 8, 2021
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to new Amazon Elastic Compute Cloud resource types. For more information, see Supported Resource Types.	September 7, 2021

AWS Config supports new conformance packs	With this release, AWS Config updates the following conformance packs: • Operational Best Practices for APRA CPG 234 • Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 1 • Operational Best Practices for CIS AWS Foundations Benchmark v1.4 Level 2 • Operational Best Practices for NCSC Cloud Security Principles • Operational Best Practices for NCSC Cyber Assesment Framework • Operational Best Practices for NIST 800 171 • Operational Best Practices for NIST CSF • Operational Best Practices for RBI Cyber Security Framework for UCBs • Operational Best Practices for RBI MD-ITF • Operational Best Practices for NYDFS 23 • Operational Best Practices for PCI DSS 3.2.1	August 30, 2021

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • aurora-resources-protected-by-backup-plan • backup-plan-min-frequency-and-min-retention-check • backup-recovery-point-encrypted • backup-recovery-point-manual-deletion-disabled • backup-recovery-point-minimum-retention-check • dynamodb-resources-protected-by-backup-plan • ebs-resources-protected-by-backup-plan • ec2-resources-protected-by-backup-plan • efs-resources-protected-by-backup-plan • fsx-resources-protected-by-backup-plan • rds-resources-protected-by-backup-plan	August 20, 2021
AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance pack: • Operational Best Practices for NZISM	August 20, 2021

Security Amazon SNS policy update	With this release, AWS Config updates the IAM policy statement for the Amazon SNS topic when using service-linked roles to include security protectio ns that restrict access with `sourceARN` and/or `sourceAccountId` in the topic policy. This helps make sure Amazon SNS is accessing your resources on behalf of expected users and scenarios only. The following page is updated: • Permissions for the Amazon SNS Topic	August 17, 2021

Security AWS Lambda policy update	With this release, AWS Config updates the AWS Lambda resource-based policy for AWS Config custom rules to include security protections that restrict access with `sourceARN` and/or `sourceAccountId` in the invoke request. This helps make sure AWS Lambda is accessing your resources on behalf of expected users and scenarios only. The following pages are updated: • AWS::Config::ConfigRule • Developing a Custom Rule for AWS Config	August 12, 2021
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to Amazon Kinesis resource types. For more informati on, see Supported Resource Types.	August 6, 2021

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance pack: • Operational Best Practices for Esquema Nacional de Seguridad (ENS) High The following conformance packs are updated: • Operational Best Practices for AWS Well-Architected Framework Reliability Pillar • Operational Best Practices for AWS Well-Architected Framework Security Pillar • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium • Operational Best Practices for HIPAA Security	July 30, 2021
Example AWS Lambda Functions for AWS Config Custom Rules	With this release, AWS Config provides Python example functions in Example AWS Lambda Functions for AWS Config Rules (Python).	July 29, 2021

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to list tags for a log group, list tags for a state machine, and list all state machines. These policies now grant permission to get details about a state machine. These policies also now support additional permission for Amazon EC2 Systems Manager (SSM), Amazon Elastic Container Registry, Amazon FSx, Amazon Data Firehose, Amazon Managed Streaming for Apache Kafka (Amazon MSK), Amazon Relational Database Service (Amazon RDS), Amazon Route 53, Amazon SageMaker AI, Amazon Simple Notification Service, AWS Database Migration Service, AWS Global Accelerator, and AWS Storage Gateway. For more information, see AWS managed policies for AWS Config.	July 28, 2021
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to AWS Backup resource types. For more information, see Supported Resource Types.	July 14, 2021

AWS Config supports new conformance packs	With this release, AWS Config supports the following conformance packs: • Operational Best Practices for CIS Critical Security Controls v8 IG1 • Operational Best Practices for CIS Critical Security Controls v8 IG2 • Operational Best Practices for CIS Critical Security Controls v8 IG3 • Operational Best Practices for NIST 1800 25	July 9, 2021
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • ssm-document-not-public • s3-account-level-public-access-blocks-periodic	June 25, 2021
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • ec2-instance-multiple-eni-check • elbv2-acm-certificate-required • autoscaling-launch-config-public-ip-disabled	June 10, 2021

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to view the permissions of AWS Systems Manager documents and information about IAM Access Analyzer. These policies now support additional AWS resource types for Amazon Kinesis, Amazon ElastiCache, Amazon EMR, AWS Network Firewall, Amazon Route 53, and Amazon Relational Database Service (Amazon RDS). These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types. These policies also now support filtering Lambda@Edge functions for the lambda-inside-vpc AWS Config managed rule. For more information, see AWS managed policies for AWS Config.	June 8, 2021

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • elasticsearch-logs-to-cloudwatch • rds-cluster-multi-az-enabled • api-gw-associated-with-waf • iam-policy-no-statements-with-full-access	May 19, 2021
AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to Amazon Elastic File System resource types. For more information, see Supported Resource Types.	May 13, 2021

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grants permission that allow AWS Config to make read-only GET calls to API Gateway to support a Config Rule for API Gateway. These policies also adds permissions that allow AWS Config to invoke Amazon Simple Storage Service (Amazon S3) read-only APIs, which are required to support the new `AWS::S3::AccessPoint` resource type. For more information, see AWS managed policies for AWS Config.	May 10, 2021
AWS Config Custom Rules	The following pages in the developer guide are updated: • Getting Started with Custom Rules for AWS Config • Developing a Custom Rule for AWS Config	April 30, 2021

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • aurora-mysql-backtracking-enabled • ec2-instance-profile-attached • ecs-task-definition-user-for-host-mode-check • no-unrestricted-route-to-igw • rds-automatic-minor-version-upgrade-enabled • redshift-enhanced-vpc-routing-enabled	April 15, 2021

Security IAM update	The `AWSConfigServiceRolePolicy` policy and `AWS_ConfigRole` policy now grant permission to view information about AWS Systems Manager specified documents. These policies also now support additional AWS resource types for AWS Backup, Amazon Elastic File System, Amazon ElastiCache, Amazon Simple Storage Service (Amazon S3), Amazon Elastic Compute Cloud (Amazon EC2), Amazon Kinesis, Amazon SageMaker AI, AWS Database Migration Service, and Amazon Route 53. These permission changes allow AWS Config to invoke the read-only APIs required to support these resource types. For more information, see AWS managed policies for AWS Config.	April 14, 2021

Conformance Pack Compliance as Configuration Items (CIs)	With this release, AWS Config supports conformance pack compliance as configuration items. This enables you to: • View a timeline of changes to the compliance state of your conformance packs • Aggregate conformance packs compliance across multiple accounts and regions • Use advanced queries to check the compliance of your conformance packs The following data types are updated: • DescribeAggregateComplianceByConformancePacks • GetAggregateConformancePackComplianceSummary The following pages in the developer guide are updated: • Viewing Compliance Data in the Conformance Packs Dashboard • Viewing Compliance History Timeline for Conformance Packs	March 30, 2021

	• Viewing Compliance Data in the Aggregator Dashboard • Querying the Current Configuration State of AWS Resources • Supported Resource Types	
Pagination update	With this release, AWS Config advanced queries feature now supports paginatio n for queries that contain aggregate functions, such as COUNT and SUM. You can now use advanced queries to get complete results for your aggregate queries through pagination, which were previously limited to 500 rows. For more informati on, see Querying the Current Configuration State of AWS Resources	March 26, 2021
Region support	With this release, AWS Config and AWS Config Rules is now supported in Asia Pacific (Osaka) Region.	March 4, 2021

AWS Config supports new resources types	With this release, you can use AWS Config to record configuration changes to Amazon Elastic Container Registry, Amazon Elastic Container Service, and Amazon Elastic Kubernete s Service resource types. For more information, see Supported Resource Types.	February 25, 2021
KMS encryption support	With this release, AWS Config allows you to use KMS-based encryption on objects delivered by AWS Config for S3 bucket delivery. The following data types are updated: • DeliveryChannel • PutDeliveryChannel The following pages in the developer guide are updated: • Permissions for the KMS Key • Permissions for the IAM Role Assigned to AWS Config	February 16, 2021

AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • secretsmanager-secret-periodic-rotation • secretsmanager-secret-unused • secretsmanager-using-cmk	February 16, 2021
Saved Query Region support	With this release, saved query is now supported in AWS GovCloud (US-East) and AWS GovCloud (US-West) Regions.	February 15, 2021
Multi-account multi-region data aggregation Region support	With this release, multi-account multi-region data aggregation is now supported in Africa (Cape Town) and Europe (Milan) Regions. For more information, see Multi-Account Multi-Region Data Aggregation.	February 15, 2021
Advanced queries Region support	With this release, advanced queries is now supported in Africa (Cape Town) and Europe (Milan) Regions. For more information, see Querying the Current Configuration State of AWS Resources.	February 15, 2021
AWS Config documentation history notification available through RSS feed	You can now receive notificat ion about updates to the AWS Config documentation by subscribing to an RSS feed.	January 1, 2021

Earlier Updates

The following table describes the documentation release history of AWS Config prior to Dec 31, 2020.

Change	Description	Release Date
Saved Query support	With this release, AWS Config allows you to save your queries. After you save the query, you can search it, copy it to the query editor, edit it, or delete it. For more information about how to save a query, see the Query Using the SQL Query Editor for AWS Config (Console) and Query Using the SQL Query Editor for AWS Config (AWS CLI). For more information about APIs, see the *AWS Config API Reference*: • PutStoredQuery • GetStoredQuery • ListStoredQueries • DeleteStoredQuery Also see Service Limits for AWS Config.	December 21, 2020
Process checks support	With this release, AWS Config supports process checks that is a type of AWS Config rule that allows you to track your external and internal tasks that require verificat ion as part of the conformance packs. With process checks, you can	December 17, 2020

Change	Description	Release Date
	list the compliance of requirements and actions at a single location. For more information about process checks, see the AWS Config Process Checks Within a Conformance Pack for AWS Config topic and the PutExternalEvaluation API.	
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • api-gw-ssl-enabled • api-gw-xray-enabled • beanstalk-enhanced-health-reporting-enabled • cloudfront-accesslogs-enabled • cloudfront-associated-with-waf • cloudfront-custom-ssl-certificate • elastic-beanstalk-managed-updates-enabled • rds-cluster-iam-authentication-enabled • redshift-cluster-kms-enabled • s3-bucket-level-public-access-prohibited • subnet-auto-assign-public-ip-disabled • vpc-network-acl-unused-check	December 17, 2020

Change	Description	Release Date
AWS Config supports AWS Network Firewall	With this release, you can use AWS Config to record configuration changes to your AWS Network Firewall FirewallPolicy, RuleGroup , and Firewall resource types. For more information, see Supported Resource Types for AWS Config.	December 4, 2020
Documentation update	AWS Config added support for organization-wide resource data aggregation in a delegated administrator account. You can now use a delegated administr ator account to aggregate resource configuration and compliance data from all member accounts of an organization in AWS Organizations. For more information, see PutConfig urationAggregator, Creating Aggregators for AWS Config and Registering a Delegated Administr ator for AWS Config.	December 4, 2020

Change	Description	Release Date
AWS Config supports new conformance packs	• Operational Best Practices for Esquema Nacional de Seguridad (ENS) Low • Operational Best Practices for Esquema Nacional de Seguridad (ENS) Medium • Operational Best Practices for NCSC Cyber Assesment Framework • Operational Best Practices for RBI Cyber Security Framework for UCBs	October 30, 2020

Change	Description	Release Date
AWS Config supports new conformance packs	• Operational Best Practices for ACSC Essential 8 • Operational Best Practices for ACSC ISM • Operational Best Practices for AI and ML • Operational Best Practices for Asset Management • Operational Best Practices for BCP and DR • Operational Best Practices for EC2 • Operational Best Practices for K-ISMS • Operational Best Practices for Load Balancing • Operational Best Practices for Logging • Operational Best Practices for Monitoring • Operational Best Practices for Serverless	October 22, 2020

Change	Description	Release Date
AWS Config supports new conformance packs	• Operational Best Practices for APRA CPG 234 • Operational Best Practices for FedRAMP(Low) • Operational Best Practices for MAS Notice 655 • Operational Best Practices for NBC TRMG • Operational Best Practices for NCSC Cloud Security Principles • Operational Best Practices for RBI MD-ITF	October 15, 2020

Change	Description	Release Date
AWS Config supports new conformance packs	• Operational Best Practices for ABS CCIG 2.0 Material Workloads • Operational Best Practices for ABS CCIG 2.0 Standard Workloads • Operational Best Practices for BNM RMiT • Operational Best Practices for Data Resiliency • Operational Best Practices for Data Lakes and Analytics Services • Operational Best Practices for Encryption and Key Management • Operational Best Practices for FDA Title 21 CFR Part 11 • Operational Best Practices for Publicly Accessible Resources • Operational Best Practices for MAS TRMG • Operational Best Practices for NERC CIP BCSI • Operational Best Practices for NYDFS 23	October 8, 2020

Change	Description	Release Date
AWS Config supports new conformance packs	• Operational Best Practices for AWS Well-Architected Framework Reliability Pillar • Operational Best Practices for AWS Well-Architected Framework Security Pillar • Operational Best Practices for Compute Services • Operational Best Practices for Databases Services • Operational Best Practices for Management and Governance Services • Operational Best Practices for Networking and Content Delivery Services • Operational Best Practices for Security, Identity, and Compliance Services • Operational Best Practices for Storage Services	October 26, 2020
AWS Config supports new conformance packs	• Operational Best Practices for FedRAMP(Moderate) • Operational Best Practices for FFIEC • Operational Best Practices for HIPAA Security • Operational Best Practices for NIST 800-53 rev 4 • Operational Best Practices for NIST 800 171	September 28, 2020

Change	Description	Release Date
Documentation update	The following conformance pack topics are updated. • Prerequisite for Conformance Packs for AWS Config • Deploying Conformance Packs for AWS Config • Managing Conformance Packs for AWS Config Across all Accounts in Your Organization	September 28, 2020
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • iam-customer-policy-blocked-kms-actions • iam-inline-policy-blocked-kms-actions	September 17, 2020
AWS Config supports AWS WAFv2	With this release, you can use AWS Config to record configuration changes to your AWS WAFv2 WebACL, IPSet, RegexPatternSet, RuleGroup, and ManagedRuleSet resource types. For more information, see Supported Resource Types for AWS Config.	September 1, 2020

Change	Description	Release Date
Documentation update	A note has been added to Full access to AWS Config about creating custom permissions that grant full access. The documentation has been updated for the following rules: • s3-bucket-server-side-encryption-enabled • ec2-instance-detailed-monitoring-enabled • ec2-managedinstance-platform-check	August 24, 2020
Documentation update	Operational Best Practices for PCI DSS 3.2.1 and Operational Best Practices for NIST CSF templates are updated.	August 14, 2020
Documentation update	Example relationship queries are added. For more information, see Example Relationship Queries for AWS Config.	July 30, 2020

Change	Description	Release Date
Documentation update	The following data types are updated: • ConfigurationAggregator • RemediationConfiguration • DescribeOrganizationConfigRules • GetOrganizationConfigRuleDetailedStatus • DescribeOrganizationConfigRuleStatuses • DescribeOrganizationConformancePacks • DescribeOrganizationConformancePackStatuses • GetOrganizationConformancePackDetailedStatus	July 23, 2020
AWS Config supports AWS Systems Manager resource type	With this release, you can use AWS Config to record configuration changes to the AWS Systems Manager file data resource type. For more information, see Supported Resource Types for AWS Config.	July 9, 2020
Documentation update	Operational Best Practices for AWS Identity And Access Management and Operational Best Practices for PCI DSS 3.2.1 templates are updated.	July 9, 2020

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • account-part-of-organizations • alb-http-drop-invalid-header-enabled • alb-waf-enabled • cloudfront-default-root-object-configured • cloudfront-origin-access-identity-enabled • cloudfront-origin-failover-enabled • cloudfront-sni-enabled • cloudtrail-security-trail-enabled • cw-loggroup-retention-period-check • dax-encryption-enabled • dynamodb-in-backup-plan • ebs-in-backup-plan • ec2-imdsv2-check • efs-in-backup-plan • eks-endpoint-no-public-access • eks-secrets-encrypted • elasticsearch-node-to-node-encryption-check • elb-cross-zone-load-balancing-enabled • elb-tls-https-listeners-only • iam-no-inline-policy-check	July 9, 2020

Change	Description	Release Date
	• rds-cluster-deletion-protection-enabled • rds-in-backup-plan • rds-instance-deletion-protection-enabled • rds-instance-iam-authentication-enabled • rds-logging-enabled • redshift-backup-enabled • waf-classic-logging-enabled • wafv2-logging-enabled For more information, see List of AWS Config Managed Rules.	
Multi-account multi-region data aggregation Region support	With this release, multi-account multi-region data aggregation is now supported in Asia Pacific (Hong Kong) and Middle East (Bahrain) Regions. For more information, see Multi-Account Multi-Region Data Aggregation and Troubleshooting for Multi-Account Multi-Region Data Aggregation for AWS Config.	July 1, 2020
Advanced queries Region support	With this release, advanced queries is now supported in Asia Pacific (Hong Kong) and Middle East (Bahrain) Regions. For more information, see Querying the Current Configuration State of AWS Resources with AWS Config.	July 1, 2020

Change	Description	Release Date
Documentation update	The documentation has been updated for the following rules: • ec2-managedinstance-association-compliance-status-check • iam-policy-no-statements-with-admin-access • required-tags • restricted-common-ports • rds-snapshots-public-prohibited • s3-bucket-policy-grantee-check	June 30, 2020
Documentation update	The documentation has been updated with information about security for AWS Config. See Security in AWS Config.	June 24, 2020
Documentation update	AWS Control Tower Detective Guardrails Conformance Pack template is updated. For more information, see AWS Control Tower Detective Guardrails Conformance Pack.	June 4, 2020
AWS Config supports a new conformance pack	With this release, AWS Config supports Operational Best Practices for NIST CSF conformance pack. For more information, see Operational Best Practices for NIST CSF .	May 29, 2020

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • dynamodb-pitr-enabled • dynamodb-table-encrypted-kms • ec2-ebs-encryption-by-default • rds-snapshot-encrypted • redshift-require-tls-ssl • s3-bucket-default-lock-enabled • s3-default-encryption-kms • securityhub-enabled • sns-encrypted-kms For more information, see List of AWS Config Managed Rules.	May 28, 2020

Change	Description	Release Date
Delegated administrator support	With this release, you can deploy AWS Config rules and conformance packs from any delegated member account in your organization, in addition to the management account. For more information about APIs, see the *AWS Config API Reference*: • PutOrganizationConfigRule • PutOrganizationConformancePack • DescribeOrganizationConfigRules • GetOrganizationConfigRuleDetailedStatus • DescribeOrganizationConfigRuleStatuses • DeleteOrganizationConfigRule • DeleteOrganizationConformancePack • DescribeOrganizationConformancePacks • DescribeOrganizationConformancePackStatuses • GetOrganizationConformancePackDetailedStatus For more information, see Service Limits for AWS Config.	May 27, 2020

Change	Description	Release Date
AWS Config rules Region support	With this release, few AWS Config rules are supported in Africa (Cape Town) and Europe (Milan) regions. For a detailed list of rules and the regions they are supported in, see List of AWS Config Managed Rules.	April 28, 2020
AWS Config supports new conformance packs	With this release, AWS Config supports two conformance packs. • AWS Control Tower Detective Guardrails Conformance Pack • Operational Best Practices for CIS For more information, see Conformance Pack Sample Templates for AWS Config.	April 22, 2020
AWS Config supports AWS Secrets Manager	With this release, you can use AWS Config to record configuration changes to your Secrets Manager secret. For more information, see Supported Resource Types for AWS Config.	April 20, 2020

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • secretsmanager-rotation-enabled-check • secretsmanager-scheduled-rotation-success-check For more information, see List of AWS Config Managed Rules.	April 16, 2020
Conformance pack Region support	With this release, conformance packs are now supported in Asia Pacific (Hong Kong) and Middle East (Bahrain). For more information, see Conformance Packs.	April 8, 2020
Documentation update	AWS Config limits are available in this developer guide. For more information, see Service Limits for AWS Config.	April 8, 2020
Documentation update	Third-party resources that are managed (that is, created/updated/deleted) through AWS CloudFormation registry are automatically tracked in AWS Config as configuration items. For more information, see Recording Configurations with AWS Config for Third-Party Resources using the AWS CLI.	March 30, 2020

Change	Description	Release Date
Documentation update	The AWS Config Managed Rules are updated to include AWS Region information. For more information, see List of AWS Config Managed Rules.	March 27, 2020
AWS Config supports Amazon SNS resource type	With this release, you can use AWS Config to record configuration changes to your Amazon SNS topic. For more information, see Supported Resource Types for AWS Config.	March 6, 2020
Multi-account multi-region data aggregation Region support	With this release, multi-account multi-region data aggregation is now supported in Europe (Stockholm) Region. For more information, see Multi-Account Multi-Region Data Aggregation.	March 5, 2020
Advanced queries Region support	With this release, advanced queries is now supported in Europe (Stockholm) Region. For more information, see Querying the Current Configuration State of AWS Resources with AWS Config.	March 5, 2020

Change	Description	Release Date
AWS Config allows you to run advanced queries with configuration aggregators	With this release, AWS Config adds support to run advanced queries based on resource configuration properties with configuration aggregators, enabling you to run the same queries across multiple accounts and Regions. For more information, see Querying the Current Configuration State of AWS Resources with AWS Config. With this release, AWS Config adds `SelectAggregateResourceConfig` API. For more information, see SelectAggregateResourceConfig in the *AWS Config API Reference*:	February 28, 2020
AWS Config supports Amazon SQS resource type	With this release, you can use AWS Config to record configuration changes to your Amazon SQS queue. For more information, see Supported Resource Types for AWS Config.	February 13, 2020

Change	Description	Release Date
AWS CloudFormation support for Conformance packs	With this release, AWS CloudFormation support for the following resources was added: `AWS::Config::ConformancePack` and `OrganizationConformancePack`. • AWS::Config::ConformancePack Use the `AWS::Config::ConformancePack` resource to create a Conformance Pack that is a collection of AWS Config rules that can be easily deployed in an account and a Region and across AWS Organization. • AWS::Config::OrganizationConformancePack Use the `AWS::Config::OrganizationConformancePack` resource to create an Organization Conformance Pack that has information about conformance packs that AWS Config creates in the member accounts.	February 13, 2020

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • api-gw-execution-logging-enabled • ec2-stopped-instance • elasticache-redis-cluster-automatic-backup-check • emr-master-no-public-ip • guardduty-non-archived-findings • rds-enhanced-monitoring-enabled • s3-account-level-public-access-blocks • sagemaker-endpoint-configuration-kms-key-configured • service-vpc-endpoint-enabled For more information, see List of AWS Config Managed Rules.	December 20, 2019

Change	Description	Release Date
Record configurations for custom resource types	With this release, AWS Config introduces support to record configurations for custom resource types. You can publish the configuration data of third-party resources into AWS Config and view and monitor the resource inventory and configuration history using AWS Config console and APIs. For more information, see Recording Configurations with AWS Config for Third-Party Resources using the AWS CLI. For more information about APIs, see the *AWS Config API Reference*: • DeleteResourceConfig • PutResourceConfig	November 20, 2019

Change	Description	Release Date
Conformance packs	With this release, AWS Config introduces conformance packs. Conformance packs enable you to package a collection of AWS Config rules and remediation actions that can then be deployed together as a single entity across an entire AWS Organization. For more information, see Conformance Packs. For more information about APIs, see the *AWS Config API Reference*: • DeleteOrganizationConformancePack • DeleteOrganizationConformancePack • DescribeConformancePacks • DescribeConformancePacks • DescribeConformancePackStatus • DescribeOrganizationConformancePacks • DescribeOrganizationConformancePackStatuses • GetConformancePackComplianceDetails • GetConformancePackComplianceSummary • GetOrganizationConformancePackDetailedStatus, • PutConformancePack • PutOrganizationConformancePack	November 19, 2019

Change	Description	Release Date
AWS Config supports Amazon OpenSearch Service and AWS Key Management Service resource types	With this release, you can use AWS Config to record configuration changes to your Amazon OpenSearch Service domain and AWS Key Management Service key. For more information, see Supported Resource Types for AWS Config.	November 11, 2019
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • dms-replication-not-public • emr-kerberos-enabled • internet-gateway-authorized-vpc-only • kms-cmk-not-scheduled-for-deletion • sagemaker-notebook-no-direct-internet-access • sagemaker-notebook-instance-kms-key-configured • shield-drt-access For more information, see List of AWS Config Managed Rules.	October 10, 2019

Change	Description	Release Date
AWS Config supports Amazon RDS resource type	With this release, you can use AWS Config to record configuration changes to your Amazon Relationa l Database Service (Amazon RDS) DBCluster and DBClusterSnapshot. For more information, see Supported Resource Types for AWS Config.	September 17, 2019
AWS Config supports Amazon QLDB resource type	With this release, you can use AWS Config to record configura tion changes to Amazon Quantum Ledger Database (QLDB) ledger resource type. For more information, see Supported Resource Types for AWS Config.	September 10, 2019

Change	Description	Release Date
AWS Config allows you to apply auto remediation on noncompliant resources as evaluated by AWS Config Rules	With this release, AWS Config introduces support to apply auto remediation using AWS Systems Manager automation documents on noncompliant resources as evaluated by AWS Config Rules. For more information, see Remediating Noncompliant Resources with AWS Config. With this release, AWS Config adds the following new APIs. For more information, see the *AWS Config API Reference* : • PutRemediationExceptions • DescribeRemediationExceptions • DeleteRemediationExceptions	September 5, 2019

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config supports the following managed rules: • alb-http-to-https-redirection-check • api-gw-cache-enabled-and-encrypted • api-gw-endpoint-type-check • cloudtrail-s3-dataevents-enabled • cloudwatch-log-group-encrypted • ebs-snapshot-public-restorable-check • elb-deletion-protection-enabled • lambda-concurrency-check • lambda-dlq-check • lambda-inside-vpc • shield-advanced-enabled-autorenew • vpc-vpn-2-tunnels-up For more information, see List of AWS Config Managed Rules.	August 22, 2019

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config updates the following managed rules: • cloudfront-viewer-policy-https • ec2-instance-no-public-ip • ec2-security-group-attached-to-eni • efs-encrypted-check • elasticsearch-encrypted-at-rest • elasticsearch-in-vpc-only • redshift-cluster-public-access-check • vpc-sg-open-only-to-authorized-ports For more information, see List of AWS Config Managed Rules.	July 31, 2019
AWS Config supports Amazon EC2 resource types	With this release, you can use AWS Config to record configuration changes to the following Amazon EC2 resources; VPCEndpoint, VPCEndpointService, and VPCPeeringConnection. For more information, see Supported Resource Types for AWS Config.	July 12, 2019

Change	Description	Release Date
AWS Config allows you to manage AWS Config rules across all AWS accounts within an organization	With this release, AWS Config introduces support for managing AWS Config rules across all AWS accounts within an organization. You can centrally create, update, and delete AWS Config rules across all accounts in your organizat ion. For more information, see Managing AWS Config Rules Across All Accounts in Your Organization. For more information about APIs, see the *AWS Config API Reference*: • PutOrganizationConfigRule • DescribeOrganizationConfigRules • GetOrganizationConfigRuleDe tailedStatus • DescribeOrganizationConfigR uleStatuses • DeleteOrganizationConfigRule	July 9, 2019
AWS Config supports Amazon S3 and Amazon EC2 resource types	With this release, you can use AWS Config to record configura tion changes to the Amazon S3 AccountPublicAccessBlock resource and the following Amazon EC2 resources; NatGateway, EgressOnl yInternetGateway, and FlowLog. For more information, see Supported Resource Types for AWS Config.	May 17, 2019

Change	Description	Release Date
AWS Config updates managed rules	With this release, AWS Config updates the following managed rules: • s3-bucket-public-read-prohibited • s3-bucket-public-write-prohibited For more information, see List of AWS Config Managed Rules.	May 7, 2019
AWS Config allows you to delete a remediati on action using AWS Management Console.	With this release, AWS Config introduces support to delete a remediation action using AWS Management Console. For more information, see Remediating Noncompliant Resources with AWS Config.	April 24, 2019
AWS Config supports new managed rules	This release supports a new managed rule: fms-shield-resource-policy-check. For more information, see List of AWS Config Managed Rules.	April 7, 2019

Change	Description	Release Date
AWS Config supports Amazon API Gateway resource type	With this release, you can use AWS Config to record configuration changes to the following Amazon API Gateway resources; Api (WebSocket API), RestApi (REST API), Stage (WebSocket API stage), and Stage (REST API stage). For more information, see Supported Resource Types for AWS Config.	March 20, 2019
AWS Config allows you to run advanced queries	With this release, AWS Config adds support to run advanced queries based on resource configuration properties. For more information, see Querying the Current Configuration State of AWS Resources with AWS Config. With this release, AWS Config adds `SelectResourceConfig` API. For more information, see SelectResourceConfig in the *AWS Config API Reference*:	March 19, 2019

Change	Description	Release Date
AWS Config allows you to assign tags your AWS Config resources	With this release, AWS Config introduces support for tag based access control for three AWS Config resources—`ConfigRule`, `ConfigurationAggregator`, and `AggregationAuthorization` . For more information, see Tagging Your AWS Config Resources. With this release, you can add, remove or list tags from your AWS Config resources using the following data types. For more information, see the *AWS Config API Reference*: • ListTagsForResource • TagResource • UntagResource	March 14, 2019

Change	Description	Release Date
AWS Config allows you to apply remediation on noncompliant resources as evaluated by AWS Config Rules	With this release, AWS Config introduces support to apply remediation using AWS Systems Manager automation documents on noncompliant resources as evaluated by AWS Config Rules. For more information, see Remediating Noncompliant Resources with AWS Config. With this release, AWS Config adds the following new APIs. For more information, see the *AWS Config API Reference* : • DeleteRemediationConfiguration • DescribeRemediationConfigurations • DescribeRemediationExecutionStatus • PutRemediationConfigurations • StartRemediationExecution	March 12, 2019

Change	Description	Release Date
AWS Config supports AWS Config Rules in China (Ningxia) Region	This release only supports 54 AWS Config Rules in the China (Ningxia) Region. For more information, see List of AWS Config Managed Rules. However, AWS Config does not currently support the following rules in the China (Ningxia) Region: • acm-certificate-expiration-check • cmk-backing-key-rotation-enabled • cloudformation-stack-drift-detection-check • cloudformation-stack-notification-check • cloud-trail-encryption-enabled • cloud-trail-log-file-validation-enabled • codebuild-project-envvar-awscred-check • codebuild-project-source-repo-url-check • codepipeline-deployment-count-check • codepipeline-region-fanout-check • dynamodb-table-encryption-enabled • elb-acm-certificate-required • encrypted-volumes • fms-webacl-resource-policy-check	March 12, 2019

Change	Description	Release Date
	• fms-webacl-rulegroup-association-check • guardduty-enabled-centralized • lambda-function-public-access-prohibited • lambda-function-settings-check • rds-storage-encrypted • root-account-mfa-hardware-mfa-enabled • root-account-mfa-enabled • s3-bucket-blacklisted-actions-prohibited • s3-bucket-policy-grantee-check • s3-bucket-policy-not-more-permissive • s3-bucket-public-read-prohibited • s3-bucket-public-write-prohibited • s3-bucket-server-side-encryption-enabled • s3-bucket-ssl-requests-only	
AWS Config supports new managed rules	This release supports the following new managed rules: • iam-user-mfa-enabled • s3-bucket-policy-grantee-check For more information, see List of AWS Config Managed Rules.	January 21, 2019

Change	Description	Release Date
AWS Config supports Service Catalog resource type	With this release, you can use AWS Config to record configuration changes to the following Service Catalog resources; CloudFromation product, provisioned product, and portfolio. For more information, see Supported Resource Types for AWS Config.	January 11, 2019
Service-linked AWS Config rules support	With this release, AWS Config adds a new managed config rule that supports other AWS services to create AWS Config Rules in your account. For more information, see Service-Linked AWS Config Rules.	November 20, 2018
AWS Config allows you to aggregate configuration data of AWS resources	With this release, AWS Config introduces support for aggregati ng the configuration data of AWS resources. For more information, see Viewing Compliance and Inventory Data in the Aggregator Dashboard for AWS Config. With this release, AWS Config adds the following new APIs. For more information, see the *AWS Config API Reference* : • BatchGetAggregateResourceConfig • GetAggregateDiscoveredResourceCounts • GetAggregateResourceConfig • ListAggregateDiscoveredResources	November 19, 2018

Change	Description	Release Date
AWS Config supports new managed rules	This release supports the following new managed rules: • cloudformation-stack-drift-detection-check • codepipeline-deployment-count-check • codepipeline-region-fanout-check For more information, see List of AWS Config Managed Rules.	November 19, 2018

Change	Description	Release Date
AWS Config supports new managed rules	This release supports the following new managed rules: • access-keys-rotated • cloud-trail-cloud-watch-logs-enabled • cloud-trail-encryption-enabled • cloud-trail-log-file-validation-enabled • cmk-backing-key-rotation-enabled • iam-policy-no-statements-with-admin-access • iam-role-managed-policy-check • iam-root-access-key-check • iam-user-unused-credentials-check • mfa-enabled-for-iam-console-access • multi-region-cloudtrail-enabled • root-account-hardware-mfa-enabled • vpc-flow-logs-enabled For more information, see List of AWS Config Managed Rules.	November 12, 2018

Change	Description	Release Date
AWS Config supports new managed rules	This release supports the following new managed rules: • dynamodb-table-encryption-enabled • elb-logging-enabled • rds-instance-public-access-check • vpc-default-security-group-closed For more information, see List of AWS Config Managed Rules.	October 24, 2018
Compliance history support	With this release, AWS Config now supports storing compliance history of resources as evaluated by AWS Config Rules. For more information, see Viewing Compliance History Timeline for Resources and Rules.	October 18, 2018
Multi-account multi-region Data Aggregation Region support	With this release, multi-account multi-region Data Aggregation is now supported in six new Regions. For more information, see Multi-Account Multi-Region Data Aggregation.	October 4, 2018
AWS Config supports resource-level permissions for AWS Config Rules APIs actions	With this release, AWS Config supports resource-level permissions for certain AWS Config Rules API actions. For more information about the supported APIs, see Supported Resource-Level Permissions for AWS Config Rule API Actions.	October 1, 2018

Change	Description	Release Date
AWS Config supports CodePipeline resource type	With this release, you can use AWS Config to record configuration changes to the AWS CodePipeline resource type. For more information, see Supported Resource Types for AWS Config.	September 12, 2018
AWS Config supports new managed rules	This release supports the following new managed rules: • ec2-instance-managed-by-systems-manager • ec2-managedinstance-association-compliance-status-check • ec2-managedinstance-patch-compliance-status-check • guardduty-enabled-centralized • rds-snapshots-public-prohibited • s3-bucket-blacklisted-actions-prohibited • s3-bucket-policy-not-more-permissive For more information, see List of AWS Config Managed Rules.	September 5, 2018

Change	Description	Release Date
AWS Config supports AWS Systems Manager resource type	With this release, you can use AWS Config to record configuration changes to the AWS Systems Manager patch compliance and association compliance resource types. For more information, see Supported Resource Types for AWS Config.	August 9, 2018
AWS Config allows you to delete your AWS Config data using AWS Management Console	With this release, AWS Config introduces support for retention period using AWS Management Console. In the AWS Management Console, you can select a custom data retention period for your `ConfigurationItems`. For more information, see Deleting AWS Config Data.	August 7, 2018
AWS Config supports AWS Shield resource type	With this release, you can use AWS Config to record configuration changes to the AWS Shield Protection resource type. For more information, see Supported Resource Types for AWS Config.	August 7, 2018
AWS Config supports AWS PrivateLink	With this release, AWS Config supports AWS PrivateLink, enabling you to route data between your Amazon Virtual Private Cloud (VPC) and AWS Config entirely within the AWS network. For more information, see Using AWS Config with Interface Amazon VPC Endpoints.	July 31, 2018

Change	Description	Release Date
AWS Config allows you to delete your AWS Config data	With this release, AWS Config introduces support for retention period. AWS Config allows you to delete your data by specifying a retention period for your `ConfigurationItems`. For more information, see Deleting AWS Config Data. With this release, AWS Config adds the following new APIs. For more information, see the *AWS Config API Reference* : • PutRetentionConfiguration • DescribeRetentionConfigurations • DeleteRetentionConfiguration	May 25, 2018
AWS Config supports new managed rules	This release supports the following two new managed rules: • lambda-function-settings-check • s3-bucket-replication-enabled • iam-policy-blacklisted-check For more information, see List of AWS Config Managed Rules.	May 10, 2018
AWS Config supports AWS X-Ray resource type	With this release, you can use AWS Config to record configuration changes to the AWS X-Ray EncryptionConfig resource type. For more information, see Supported Resource Types for AWS Config.	May 1, 2018

Change	Description	Release Date
AWS Config supports AWS Lambda resource type and one new managed rule	With this release, you can use AWS Config to record configuration changes to the AWS Lambda function resource type. For more information, see Supported Resource Types for AWS Config. This release also supports the lambda-function-public-access-prohibited managed rule. For more information, see AWS Config Managed Rules.	April 25, 2018
AWS Config supports AWS Elastic Beanstalk resource type	With this release, you can use AWS Config to record configuration changes to the AWS Elastic Beanstalk Application, Application Version, and Environment resources. For more information, see Supported Resource Types for AWS Config.	April 24, 2018
AWS Config supports new managed rules	This release supports the following two new managed rules: • fms-webacl-resource-policy-check • fms-webacl-rulegroup-association-check For more information, see List of AWS Config Managed Rules.	April 4, 2018

Change	Description	Release Date
Multi-account multi-region data aggregation	With this release, AWS Config introduces multi-account multi-region data aggregation. This feature allows you to aggregate AWS Config data from multiple accounts or an organization and multiple regions into an aggregator account. For more information, see Multi-Account Multi-Region Data Aggregation. With this release, AWS Config adds the following new APIs. For more information, see the *AWS Config API Reference* : • PutConfigurationAggregator • DescribePendingAggregationRequests • DeletePendingAggregationRequest • PutAggregationAuthorization • DescribeAggregationAuthorizations • GetAggregateConfigRuleComplianceSummary • DescribeAggregateComplianceByConfigRules • GetAggregateComplianceDetailsByConfigRule • DescribeConfigurationAggregators • DescribeConfigurationAggregatorSourcesStatus • DeleteAggregationAuthorization	April 4, 2018

Change	Description	Release Date
	• DeleteConfigurationAggregator	
Monitoring AWS Config with Amazon CloudWatch Events	With this release, use Amazon CloudWatch Events to detect and react to changes in the status of AWS Config events. For more information, see Monitoring AWS Config with Amazon EventBridge.	March 29, 2018
New API operation	With this release, AWS Config adds support for BatchGetResourceConfig API, allowing you to batch-retrieve the current state of one or more of your resources.	March 20, 2018
AWS Config supports AWS WAF RuleGroup resource type	With this release, you can use AWS Config to record configuration changes to the AWS WAF RuleGroup and AWS WAF RuleGroup Regional resources. For more information, see Supported Resource Types for AWS Config.	February 15, 2018

Change	Description	Release Date
AWS Config supports new managed rules	This release supports the following new managed rules: • elb-acm-certificate-required • elb-custom-security-policy-ssl-check • elb-predefined-security-policy-ssl-check • codebuild-project-envvar-awscred-check • codebuild-project-source-repo-url-check • iam-group-has-users-check • s3-bucket-server-side-encryption-enabled For more information, see List of AWS Config Managed Rules.	January 25, 2018
AWS Config supports Elastic Load Balancing resource type	With this release, you can use AWS Config to record configuration changes to your Elastic Load Balancing classic load balancers. For more information, see Supported Resource Types for AWS Config.	November 17, 2017

Change	Description	Release Date
AWS Config supports the Amazon CloudFront and AWS WAF resource type	With this release, you can use AWS Config to record configuration changes to your CloudFront distribut ion and streaming distribution. With this release, you can use AWS Config to record configuration changes to the following AWS WAF and AWS WAF Regional resources; rate based rule, rule, and Web ACL. For more information, see Supported Resource Types for AWS Config.	November 15, 2017
AWS Config supports the AWS CodeBuild resource type	With this release, you can use AWS Config to record configuration changes to your AWS CodeBuild projects. For more information, see Supported Resource Types for AWS Config.	October 20, 2017

Change	Description	Release Date
AWS Config supports Auto Scaling resources and one new managed rule	With this release, you can use AWS Config to record configuration changes to the following Auto Scaling resources; groups, launch configuration, scheduled action, and scaling policy. For more information, see Supported Resource Types for AWS Config. This release also supports the following managed rule: • autoscaling-group-elb-healthcheck-required For more information, see AWS Config Managed Rules.	September 18, 2017
AWS Config supports the AWS CodeBuild resource type	With this release, you can use AWS Config to record configuration changes to your AWS CodeBuild projects. For more information, see Supported Resource Types for AWS Config.	October 20, 2017

Change	Description	Release Date
AWS Config supports Auto Scaling resources and one new managed rule	With this release, you can use AWS Config to record configuration changes to the following Auto Scaling resources; groups, launch configuration, scheduled action, and scaling policy. For more information, see Supported Resource Types for AWS Config. This release also supports the following managed rule: • autoscaling-group-elb-healthcheck-required For more information, see AWS Config Managed Rules.	September 18, 2017
AWS Config supports the DynamoDB table resource type and one new managed rule	With this release, you can use AWS Config to record configuration changes to your DynamoDB tables. For more information, see Supported Resource Types for AWS Config. This release supports the following managed rule: • dynamodb-autoscaling-enabled For more information, see AWS Config Managed Rules.	September 8, 2017

Change	Description	Release Date
AWS Config supports two new managed rules for Amazon S3	This release supports two new managed rules: • s3-bucket-public-read-prohibited • s3-bucket-public-write-prohibited For more information, see AWS Config Managed Rules.	August 14, 2017
New page in the AWS Config console	You can use the **Dashboard** in the AWS Config console to see the following: • Total number of resources • Total number of rules • Number of noncompliant resources • Number of noncompliant rules For more information, see Viewing the AWS Config Dashboard.	July 17, 2017
New API operation	You can use the GetDiscoveredResourceCounts operation to return the number of resource types, the number of each resource type, and the total number of resources that AWS Config is recording in a Region for your AWS account.	July 17, 2017

Change	Description	Release Date
AWS Config supports the AWS CloudFormation stack resource type and one new managed rule	With this release, you can use AWS Config to record configuration changes to your AWS CloudFormation stacks. For more information, see Supported Resource Types for AWS Config. This release supports the following managed rule: • cloudformation-stack-notification-check For more information, see AWS Config Managed Rules.	July 6, 2017
New and updated content	This release adds support for AWS Config Rules in the Canada (Central) Region and South America (São Paulo) Region. For all regions that support AWS Config and Config Rules, see AWS Regions and Endpoints in the *AWS General Reference*.	July 5, 2017

Change	Description	Release Date
New and updated content	AWS Config Rules is available in the AWS GovCloud (US) Region. For more information, see the AWS GovCloud (US) User Guide. For regions that support AWS Config, see AWS Regions and Endpoints in the *AWS General Reference*.	June 8, 2017
AWS Config supports the Amazon CloudWatch alarm resource type and three new managed rules	With this release, you can use AWS Config to record configuration changes to your Amazon CloudWatch alarms. For more information, see Supported Resource Types for AWS Config. This release supports three new managed rules: • cloudwatch-alarm-action-check • cloudwatch-alarm-resource-check • cloudwatch-alarm-settings-check For more information, see AWS Config Managed Rules.	June 1, 2017

Change	Description	Release Date
New and updated content	This release supports specifying the application version number for the following managed rules: • ec2-managedinstance-applications-blacklisted • ec2-managedinstance-applications-required For more information, see AWS Config Managed Rules.	June 1, 2017
New and updated content	This release adds support for AWS Config Rules in the Asia Pacific (Mumbai) Region. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	April 27, 2017
New and updated content	This release supports an updated console experience for adding AWS Config managed rules to your account for the first time. When you set up AWS Config Rules for the first time or in a new Region, you can search for AWS managed rules by name, description, or label. You can choose **Select all** to select all rules or choose **Clear all** to clear all rules. For more information, see Add, View, Update and Delete Rules (Console).	April 5, 2017

Change	Description	Release Date
AWS Config supports new managed rules	This release supports the following new managed rules: • acm-certificate-expiration-check • ec2-instance-detailed-monitoring-enabled • ec2-managedinstance-inventory-blacklisted • ec2-volume-inuse-check • iam-user-group-membership-check • iam-user-no-policies-check • s3-bucket-ssl-requests-only For more information, see List of AWS Config Managed Rules.	February 21, 2017
New and updated content	This release adds support for AWS Config Rules in the Europe (London) Region. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	February 21, 2017
New and updated content	This release adds AWS CloudFormation templates for AWS Config managed rules. You can use the templates to create managed rules for your account. For more information, see Creating AWS Config Managed Rules With AWS CloudFormation Templates.	February 16, 2017

Change	Description	Release Date
New and updated content	This release adds support for a new test mode for the `PutEvaluations` API. Set the `TestMode` parameter to true in your custom rule to verify whether your AWS Lambda function will deliver evaluation results to AWS Config. No updates occur to your existing evaluations, and evaluation results are not sent to AWS Config. For more information, see PutEvaluations in the *AWS Config API Reference*.	February 16, 2017
New and updated content	This release adds support for AWS Config Rules in the Asia Pacific (Seoul), and US West (N. California) Regions. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	December 21, 2016
New and updated content	This release adds support for AWS Config in the Europe (London) Region. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	December 13, 2016
New and updated content	This release adds support for AWS Config in the Canada (Central) Region. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	December 8, 2016

Change	Description	Release Date
AWS Config supports Amazon Redshift resource types and two new managed rules	With this release, you can use AWS Config to record configuration changes to your Amazon Redshift clusters, cluster parameter groups, cluster security groups, cluster snapshots, cluster subnet groups, and event subscriptions. For more information, see Supported Resource Types for AWS Config. This release supports two new managed rules: • redshift-cluster-configuration-check • redshift-cluster-maintenancesettings-check For more information, see List of AWS Config Managed Rules.	December 7, 2016
New and updated content	This release adds support for a new managed rule: • dynamodb-throughput-limit-check For more information, see List of AWS Config Managed Rules.	December 7, 2016

Change	Description	Release Date
New and updated content	This release adds support for creating up to 50 rules per Region in an account. For more information, see AWS Config Limits in the *AWS General Reference*.	December 7, 2016
AWS Config supports the managed instance inventory resource type for Amazon EC2 Systems Manager and three new managed rules	With this release, you can use AWS Config to record software configuration changes on your managed instances with support for managed instance inventory. For more information, see Recording Software Configuration for Managed Instances. This release supports three new managed rules: • ec2-managedinstance-inventory-blacklisted • ec2-managedinstance-applications-required • ec2-managedinstance-platform-check For more information, see List of AWS Config Managed Rules.	December 1, 2016
New and updated content	AWS Config is available in the China (Beijing) Region.	October 24, 2016

Change	Description	Release Date
AWS Config supports the Amazon S3 bucket resource and two new managed rules	With this release, you can use AWS Config to record configura tion changes to your Amazon S3 buckets. For more information, see Supported Resource Types for AWS Config. This release supports two new managed rules: • s3-bucket-logging-enabled • s3-bucket-versioning-enabled For more information, see AWS Config Managed Rules.	October 18, 2016
New and updated content	This release adds support for AWS Config and AWS Config Rules in the US East (Ohio) Region. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	October 17, 2016

Change	Description	Release Date
New and updated managed rules	This update adds support for eight new managed rules: • approved-amis-by-id • approved-amis-by-tag • db-instance-backup-enabled • desired-instance-type • ebs-optimized-instance • iam-password-policy • rds-multi-az-support • rds-storage-encrypted You can specify multiple parameter values for the following rules: • desired-instance-tenancy • required-tags For more information, see List of AWS Config Managed Rules.	October 4, 2016
New and updated content for the AWS Config console	This update adds support for viewing AWS CloudTrail API activity in the AWS Config timeline. If CloudTrail is logging for your account, you can view create, update, and delete API events for configuration changes to your resources. For more information, see Viewing Compliance History for your AWS Resources with AWS Config.	September 06, 2016

Change	Description	Release Date
AWS Config supports Elastic Load Balancing resource type	With this release, you can use AWS Config to record configura tion changes to your Elastic Load Balancing application load balancers. For more information, see Supported Resource Types for AWS Config.	August 31, 2016
New and updated content	This release adds support for AWS Config Rules in the Asia Pacific (Singapore), and Asia Pacific (Sydney) Regions. For more information, see AWS Regions and Endpoints in the *AWS General Reference*.	August 18, 2016
New and updated content for AWS Config Rules	This update adds support for creating a rule that can be triggered by both configuration changes and at a periodic frequency that you choose. For more information, see Components of an AWS Config Rule. This update also adds support for manually evaluating your resources against your rule and deleting evaluation results. For more information, see Evaluating Your Resources with AWS Config Rules. This update also adds support for evaluating additional resource types using custom rules.	July 25, 2016

Change	Description	Release Date
AWS Config supports Amazon RDS and AWS Certificate Manager (ACM) resource types	With this release, you can use AWS Config to record configuration changes to your Amazon Relational Database Service (Amazon RDS) DB instances, DB security groups, DB snapshots, DB subnet groups, and event subscriptions. You can also use AWS Config to record configuration changes to certificates provided by ACM. For more information, see Supported Resource Types for AWS Config.	July 21, 2016
Updated information about managing the configura tion recorder	This update adds steps for renaming and deleting the configuration recorder to Working with the configuration recorder.	July 07, 2016
Simplified role creation and updated policies	With this update, creating an IAM role for AWS Config is simplified. This enhancement is available in regions that support Config rules. To support this enhancement, the steps in Setting Up AWS Config with the Console are updated, the example policy in Permissions for the Amazon S3 Bucket for the AWS Config Delivery Channel is updated, and the example policy in Identity-based policy examples for AWS Config is updated.	March 31, 2016

Change	Description	Release Date
Example functions and events for Config rules	This update provides updated example functions.	March 29, 2016
AWS Config Rules GitHub repository	This update adds information about the AWS Config Rules GitHub repository to Evaluating Resources with AWS Config Rules. This repository provides sample functions for custom rules that are developed and contributed by AWS Config users.	March 1, 2016
AWS Config Rules	This release introduces AWS Config Rules. With rules, you can use AWS Config to evaluate whether your AWS resources comply with your desired configurations. For more information, see Evaluating Resources with AWS Config Rules.	December 18, 2015
AWS Config supports IAM resource types	With this release, you can use AWS Config to record configuration changes to your IAM users, groups, roles, and customer managed policies. For more information, see Supported Resource Types for AWS Config.	December 10, 2015

Change	Description	Release Date
AWS Config supports EC2 Dedicated host	With this release, you can use AWS Config to record configuration changes to your EC2 Dedicated hosts. For more information, see Supported Resource Types for AWS Config.	November 23, 2015
Updated permissions information	This update adds information about the following AWS managed policies for AWS Config: • `AWS_ConfigRole` – Grants AWS Config permission to get configuration details about your resources. For more information, see IAM Role Policy for Getting Configuration Details. • `AWSConfigUserAccess` – Grants read-only access to an AWS Config user. For more information, see Read-only access to AWS Config.	October 19, 2015
AWS Config Rules preview	This release introduces the AWS Config Rules preview. With rules, you can use AWS Config to evaluate whether your AWS resources comply with your desired configurations. For more information, see Evaluating Resources with AWS Config Rules.	October 7, 2015

Change	Description	Release Date
New and updated content	This release adds the ability to look up resources that AWS Config has discovered. For more information, see Looking Up Resources That Are Discovered by AWS Config.	August 27, 2015
New and updated content	This release adds the ability to select which resource types AWS Config records. For more information, see Recording AWS Resources with AWS Config.	June 23, 2015
New and updated content	This release adds support for the following regions: Asia Pacific (Tokyo), Asia Pacific (Singapore), Europe (Frankfurt), South America (São Paulo), and US West (N. California). For more information, see AWS Regions and Endpoints.	April 6, 2015
New guide	This release introduces AWS Config.	November 12, 2014